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ABSTRACT

This monograph presents a detailed description of the background, design, methods, and subjects of a study of sex-role socialization in the nursery school. The objectives of the study were to (1) define sex-role differentiation, (2) examine the relation between age and sex-role differentiation,, (3) describe and explain the influences of the nursery school and of personal, socioeconomic, and familial characteristics on sex-role differentiation, and (4) provide much needed longitudinal data on sex-role differentiation during the preschool years. Using an incomplete cohort-sequential design, the researchers followed more than four hundred 3-, 4-, and 5-year-old boys and girls for all or part of their nursery school careers. Within each age level, the classes were equally divided between lower an midddle income level schools. The children were pretested and posttested each year on five measures of sex-role development and one measure of intelligence. Additionally, the child-teacher, child-child, and teacher-child behaviors were observed at 2- to 3-week intervals in the naturalistic environment of the classrooms. Complete data from testing and observations are included in the monograph. Results are not discussed. (Author/JMB)

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Sex-Role Socialization in the Nursery School: Background, Design, Methods, and Subjects

Bonni R. Seegmiller
Hunter College of the City
University of New York

Barbara Suter
New York City

Noel Dunivant
New York University

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Sex Role Socialization in the Nursery School:

Background, Design, Methods, and Subjects

Table of Contents

	Page
List of Tables	i
Chapter I: Introduction	1
Objectives	2
Chapter II: Hypotheses	4
Chapter III: Design of the Study	5
Chapter IV: Subjects (Children and Teachers)	7
Personal, Socioeconomic, and Sibling Characteristics of Children	7
Definitions of Personal, Socioeconomic, and Sibling Characteristics of Children	7
Tables Describing the Personal, Socioeconomic, and Sibling Characteristids of the Subjects	10
Teacher Characteristics	61
Tables Describing Teacher Characteristics	62
Chapter V: Tests	69
Test Descriptions	69
Draw A Person Test (DAP)	69
Use of the DAP in the present study	70
Material	70
Description	71
Administration	71
Scoring	71
Occupational Preference Test (OPT)	71
Use of the OPT in the present study	72
Material	72
Description	72
Administration	72
Scoring	72
Toy Preference Test (TPT)	72
Use of the TPT in the present study	73
Material	73
Description	73
Administration	74
Scoring	74
Nadleman Recall Test (NRT)	74
Use of the NRT in the present study	74
Material	74
Description	74
Administration	74
Scoring	75

Table of Contents (cont. pg.2)

		Page
	It Scale for Children (BIT)	75
	Use of the BIT in the present study	76
	Material	77
	Description	77
	Administration	77
	Scoring	78
	Test Administration	78
	Testers	78
	Testing Procedures	79
	Difficulties	80
	Testing Tables	80
Chapter VI:	Observations	106
	Background	106
	Aggression	106
	Dependency	107
	Cooperation	108
	Behaviors Observed in the Study	110
	Behavior Definitions	112
	Child Behaviors	112
	Disjunctive Dependency	112
	Productive Dependency	112
	Other (Miscellaneous) Dependency	112
	Constructive Assertiveness	113
	Disjunctive Verbal Aggression	113
	Disjunctive Physical Aggression	113
	Other (Miscellaneous) Aggression	113
	Cooperation	113
	Help	113
	Share	114
	Teacher Behaviors	114
	Miscellaneous Behaviors	115
	Observation Materials	115
	Observers	116
	Observer Training and Reliability	116
	Observation Procedures	117
	Observation Tables	121
Chapter VII:	References	144

TABLES

Number	Title	Page
1	Sampling Structure of the (Incomplete)Cohort Sequential Design	6
2	Measures Used Within Each Year of the Sex Role Study	6
	YEAR ONE MASTER SAMPLE: PERSONAL, SOCIOECONOMIC, AND SIBLING CHARACTERISTICS	
3	Number of Subjects in Each Class By School SES by Sex	13
4	Number of Subjects Tested on at Least One Pretest, or One Post-Test or Observed at Least Once, By School SES by Sex by Age	15
5	Mean Fall Peabody Vocabulary Test Scores and Mean Spring Peabody Vocabulary Test Scores By School SES by Sex by Age	16
6	Number of Children in Each Ethnic Group By School SES by Sex by Age	17
7	Mean Age and Number of Children from Intact (Both Parents Present) and Non-intact Families, By School SES by Sex by Age	18
8	Number of Employed and Nonemployed Mothers and Fathers By School SES by Sex by Age	19
9	Number of Mothers in Each Hollingshead Occupational Status Group By School SES by Sex by Age	20
10	Number of Fathers in Each Hollingshead Occupational Status Group By School SES by Sex by Age	21
11	Number of Subjects Provided For by Various Sources of Income, By School SES by Sex by Age	22
12	Mean Number of Brothers, Sisters, Children in Family, and Ordinal Position, By School SES by Sex by Age	23
13	Mean Number of Subjects in Each Sibling Constellation, By School SES by Sex by Age	24
	YEAR ONE-WITHIN-YEAR LONGITUDINAL TEST SAMPLE: PERSONAL, SOCIOECONOMIC, AND SIBLING CHARACTERISTICS	
14	Number of Subjects in Each Class By School SES by Sex	25
15	Number of Subjects Tested on at Least One Pretest or One Post-test By School SES, Sex, and Age	27
16	Mean Fall Peabody Vocabulary Test Scores and Mean Spring Peabody Vocabulary Test Scores By School SES by Sex by Age	28
17	Number of Children in Each Ethnic Group By School SES by Sex by Age	29
18	Mean Age and Number of Children from Intact (Both Parents Present) and Non-intact Families, By School SES by Sex by Age	30
19	Number of Employed and Nonemployed Mothers and Fathers By School SES by Sex by Age	31
20	Number of Mothers in Each Hollingshead Occupational Status Group By School SES by Sex by Age	32
21	Number of Fathers in Each Hollingshead Occupational Status Group By School SES by Sex by Age	33
22	Number of Subjects Provided For by Various Sources of Income, By School SES by Sex by Age	34

TABLES (Cont.)

Number	Title	Page
23	Mean Number of Brothers, Sisters, Children in Family, and Ordinal Position, By School SES by Sex by Age	35
24	Mean Number of Subjects in Each Sibling Constellation, By School SES by Sex by Age	36
	YEAR TWO MASTER SAMPLE: PERSONAL, SOCIOECONOMIC, AND SIBLING CHARACTERISTICS	
25	Number of Subjects in Each Class By School SES by Sex	37
26	Number of Subjects Tested on at Least One Pretest, or One Post-test or Observed at Least Once, By School SES by Sex by Age	40
27	Mean Fall Peabody Vocabulary Test Scores and Mean Spring Peabody Vocabulary Test Scores By School SES by Sex by Age	41
28	Number of Children in Each Ethnic Group By School SES by Sex by Age	42
29	Mean Age and Number of Children from Intact (Both Parents Present) and Non-intact Families, By School SES by Sex by Age	43
30	Number of Employed and Nonemployed Mothers and Fathers By School SES by Sex by Age	44
31	Number of Mothers in Each Hollingshead Occupational Status Group By School SES by Sex by Age	45
32	Number of Fathers in Each Hollingshead Occupational Status Group By School SES by Sex by Age	46
33	Number of Subjects Provided For by Various Sources of Income, By School SES by Sex by Age	47
34	Mean Number of Brothers, Sisters, Children in Family, and Ordinal Position, By School SES by Sex by Age	48
35	Mean Number of Subjects in Each Sibling Constellation, By School SES by Sex by Age	49
	YEAR THREE MASTER SAMPLE: PERSONAL, SOCIOECONOMIC, AND SIBLING CHARACTERISTICS	
36	Number of Subjects in Each Class By School SES by Sex	50
26	Number of Subjects Tested on at Least One Pretest, or One Post-test or Observed at Least Once, By School SES by Sex by Age	40
37	Mean Fall Peabody Vocabulary Test Scores and Mean Spring Peabody Vocabulary Test Scores By School SES by Sex by Age	52
38	Number of Children in Each Ethnic Group By School SES by Sex by Age	53
39	Mean Age and Number of Children from Intact (Both Parents Present) and Non-intact Families, By School SES by Sex by Age	54
40	Number of Employed and Nonemployed Mothers and Fathers By School SES by Sex by Age	55
41	Number of Mothers in Each Hollingshead Occupational Status Group By School SES by Sex by Age	56
42	Number of Fathers in Each Hollingshead Occupational Status Group By School SES by Sex by Age	57

TABLES (Cont.)

Number	Title	Page
43	Number of Subjects Provided For by Various Sources of Income, By School SES by Sex by Age	58
44	Mean Number of Brothers, Sisters, Children in Family, and Ordinal Position, By School SES by Sex by Age	59
45	Mean Number of Subjects in Each Sibling Constellation, By School SES by Sex by Age	60
	TEACHER CHARACTERISTICS	
46	Sex and Ethnicity of Head and Assistant Teachers in Each Class, By School Income Level, and Age: Year One	62
47	Sex and Ethnicity of Head and Assistant Teachers in Each Class, By School Income Level, and Age: Year Two	64
48	Sex and Ethnicity of Head and Assistant Teachers in Each Class, By School Income Level, and Age: Year Three	67
	TESTING SAMPLES	
49	Number of Subjects Tested on at Least One Pretest, or One Posttest, or the Same Pretest and Posttest, by Class, School Income Level, Sex, and Age: Year One	82
50	Number of Subjects Taking at Least One Pretest and One (the Same) Posttest, by School Income Level, Sex, and Age: Years One, Two, and Three	84
51	Number of Subjects Tested on at Least One (Any) Pretest, One (Any) Posttest, and at Least One (Any) Pretest and One (Any) Posttest, by School Income Level, Sex, and Age: Year One	85
52	Number of Subjects Taking Pretest and/or Posttest Version of Each Test, By Test, School Income Level, Sex, and Age: Year One	86
53	Number of Subjects Taking Both Pretest and Posttest Versions of Each Test, By Test, School Income Level, Sex, and Age: Year One	87
54	Number of Subjects Tested on at Least One Pretest, or One Posttest, or the Same Pretest and Posttest, by Class, School Income Level, Sex, and Age: Year Two	88
55	Number of Subjects Tested on at Least One (Any) Pretest, One (Any) Posttest, and at Least One (Any) Pretest and One (Any) Posttest, by School Income Level, Sex, and Age: Years Two and Three	92
56	Number of Subjects Taking Pretest and/or Posttest Version of Each Test, By Test, School Income Level, Sex, and Age: Year Two	93
57	Number of Subjects Taking Both Pretest and Posttest Versions of Each Test, By Test, School Income Level, Sex, and Age: Year Two	94
58	Number of Subjects Tested on at Least One Pretest, or One Posttest, or the Same Pretest and Posttest, by Class, School Income Level, Sex, and Age: Year Three	95

TABLES (Cont.)

Number	Title	Page
59	Number of Subjects Taking Pretest and/or Posttest Version of Each Test, By Test, School Income Level, Sex, and Age: Year Three	97
60	Number of Subjects Taking Both Pretest and Posttest Versions of Each Test, By Test, School Income Level, Sex, and Age: Year Three	98
61	Number of Subjects Taking at Least One (Any) Pretest and/or Posttest in Years 1 and 2, 1 and 3, and 2 and 3	99
62	Number of Subjects Tested on Each (the Same) Pretest and/or Posttest in Two Years of the Study, By School Income Level, Sex, and Age at Beginning of Study	100
63	Number of Subjects Tested on Both Pretest and Posttest Versions of Each Test in Two Years of the Study, By Test, School Income Level, Sex, and Age at Beginning of Study	102
64	Number of Subjects Tested on Each (the Same) Pretest and/or Posttest, and Any Pretest and Posttest in All Three Years of the Study, By Test, School Income Level and Sex	104
	OBSERVATION SAMPLES	
65	Behaviors Observed in the Sex Role Socialization Study	111
66	A Sample Observation	122
67	Mean Number of Days Between Observations, By Class: Year One Observation Sample	126
68	Mean Number of Observations Children Were Present For, By Class and Sex: Year One Observation Sample	127
69	Number of Male and Female Subjects in Each Class Present at Each Observation: Year One Observation Sample	128
70	Mean Number of Days Between Observations, By Class: Year Two Observation Sample	132
71	Mean Number of Observations Children Were Present For, By Class and Sex: Year Two Observation Sample	133
72	Number of Male and Female Subjects in Each Class Present at Each Observation: Year Two Observation Sample	134
73	Mean Number of Days Between Observations, By Class: Year Three Observation Sample	139
74	Mean Number of Observations Children Were Present For, By Class and Sex: Year Three Observation Sample	140
75	Number of Male and Female Subjects in Each Class Present at Each Observation: Year Three Observation Sample	141

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Donni R. Seegmiller
Hunter College of the City
University of New York

Noel Dunivant
New York University

Barbara Suter
New York City

Chapter I

INTRODUCTION

The intent of the authors is to fully describe a rather complex study in a way that is not possible in standard journal articles. Thus, this paper provides, in one place, a basic reference source for future papers and books dealing with the NIMH-funded project, "Sex-role socialization in the nursery school" (MH 26039). The results from this research are presented in the other writings. A current list of these is available from the first author.

Sex roles are perhaps the most pervasive, enduring, and earliest learned of all roles (Flerx, Fidler, & Rogers, 1976; Kohlberg, 1966). There has been an increasing awareness in the mental health field that rigid sex typing leads to unnecessary conflicts and even personality disorders (Bem, 1974, 1975). Empirical data indicate that rigid sex-role stereotypes are still widely held. Kagan (1964), for example, pointed out that children continue to believe that aggression, dominance, and independence are more appropriate for males; passivity, nurturance, and affect, more appropriate for females (p. 143). More recent studies have produced similar findings (Maccoby & Jacklin, 1974). Certainly, both sexes are affected by categorizations that stifle individual variability. Among females, however, there is the added difficulty that in our society, both males and females hold masculine qualities in higher esteem. As Bardwick and Douvan (1971) state, "Since the sexes are different, women are defined as not-men, and that means not good, inferior" (p. 197). Barron (1968), Bem (1974, 1975), Block (1973), Ellis and Bentler (1973), and Maslow (1971) have all found that mentally healthier individuals have more flexible sex-role identities than less healthy persons. The differential treatment based solely on sex has also received much attention, especially in regard to areas such as educational and employment opportunities.

Those who wish to change these detrimental attitudes of rigid sex-typing and male superiority, along with the consequent prejudice and discrimination that result, must realize that these attitudes are ingrained beginning in early childhood. It appears, then, that to promote optimal development and opportunity, sex roles must be defined more flexibly. Since children show clear sex typing by age five, it is important to trace the earlier development of such characteristics. However, a clear understanding of how differential attitudes towards sex roles develop has not been realized as of this date. One goal of the investigation to be described in this manuscript was to provide an in-depth examination of sex-role development during the nursery-school years. In the present study, 3-, 4-, and 5-year-old boys and girls from both lower- and middle-income schools were studied throughout all, or part, of their nursery school careers. Children were pretested and posttested each year (1975-1978) on various measures of intelligence and sex-role differentiation. Children and teachers were observed every

three weeks in their classrooms. Cross-sectional as well as longitudinal relations both within and between these two sources of information are being examined.

OBJECTIVES

The total project has a number of general, as well as more specific objectives.

(1) We deal with the issue of defining sex-role differentiation. (It should be noted that the term 'sex-role differentiation' is being used here, for ease of exposition, in the most generic sense to refer to both behavioral and internal aspects. Thus, the term encompasses constructs such as sex-typed behavior, sex-role orientation, sex-role identification, sex-role preference, sex-role adoption, etc.) Specifically, we evaluate the adequacy of a number of sex-role measures, including both 'verbal-objective' tests and naturalistically observed behaviors. We also examine the relations between these different types of measures and consider the problem of construct validity. Additionally, we attempt to provide more refined definitions of assertion (aggression), dependency, and cooperation, concepts often studied in relation to sex-role differences.

(2) The relationships between age and sex-role differentiation are studied. First, we trace the development of aggression, dependency, and cooperation in preschoolers. In addition to providing normative data, this enables us to determine whether the behaviors are used with differential frequency by boys and girls. Further, we are able to examine whether boys and girls show different rates of development for these behaviors, and can evaluate whether these rates vary as a function of the age or socioeconomic status of the child. Finally, we can examine these relations as measured by the sex-role tests.

(3) A third major objective of the study is to describe and explain the influences of the nursery school and of personal, social, and demographic characteristics on sex-role differentiation. We are concerned here with peer interaction, teacher-child interaction, and family-related differences as well as with child characteristics that may be causal mechanisms. Specifically, we want to determine whether nursery-school teachers and children differentially respond to aggression, dependency, and cooperation, or to subclasses of these behaviors, according to the sex of the child. Further, we wanted to see if such differential responding by teachers and peers relates to the socio-economic status of the child; in other words, we want to see (a) whether there are sex-role differences between children from lower- and middle-income families, (b) whether or not these differences exist in fact, do people respond to children from different socioeconomic classes as if the differences were present, and (c) whether teachers and children in lower-income schools respond differently than do those in middle-income schools. Finally, we want to relate the child's sex-role differentiation to the nursery-school experience, and to other aspects of the child's social milieu.

(4) The study provides much needed longitudinal data on sex-role differentiation during the preschool years. Although there is general agreement that the early years are of crucial importance for sex-role differentiation, the study is the first to examine this process both longitudinally and intensively in this age group. We will be able to examine the contingent relations between behaviors and changes in behavior through the application of sequential analyses.

The monograph is organized as follows. The hypotheses of the study are are outlined in Chapter II. The design is set forth in Chapter III. In Chapter IV, various within- and between-year samples are described in terms of their personal, socioeconomic, and sibling characteristics. Chapters V and VI detail the tests and the observations, respectively. References are found in Chapter VII.

Chapter II

HYPOTHESES

The major hypotheses of the study were that

1. Various types of aggression (constructive assertiveness, physical and verbal aggression), dependency (disjunctive and productive), and cooperation (help, sharing, cooperation) would have differential frequencies and rates of occurrence in male and female nursery-school children.

2. Sex typing would be evident by age three on the objective test measures.

3. Differences between the sexes in the above behaviors and test measures would become more distinguishable with age.

4. Nursery-school teachers and peers would act as effective reinforcers of sex-role differentiation in that they respond to the above behaviors differentially in male and female children;

5. Teachers from lower-income schools would show more differential reinforcement based on sex than teachers in the middle-income schools.

6. Changes in sex-role differentiation as measured by the tests and in the frequency and rate of observed sex-typed behaviors would be related to response-contingent reinforcement given by the nursery-school teachers and peers.

7. Sex-role differentiation would be related to demographic variables such as parental employment, intactness of family, intelligence, etc.

Chapter III

DESIGN OF THE STUDY

The choice of the design and the measures used were based on limitations of previous research and the particular questions we wanted to answer. One major issue was the dependent measures. Here, we were concerned with issues such as just what do we mean when we talk about sex-role differentiation; how can it be measured; what are the construct validities of the measures; how reliable are they; are the measures appropriate for use with preschoolers? In order to resolve these issues, we chose to use both (so-called) verbal-objective tests and naturalistic observations to measure sex-role differentiation.

A second major consideration was that although many previous studies had been interested in the process of sex-role differentiation, with few exceptions, cross-sectional age groups had been studied. However, as Friedrich and Van Horn (1976), citing Schonfield (1974) succinctly pointed out, although such designs yield means, or normative data for each age group, individual subjects cannot be compared between ages, and the different age groups may indeed not even be comparable. Also, in cross-sectional research, generational and ontogenetic influences and curves are confounded. The need for longitudinal research was clear, in that such studies permit the examination of patterns of development for individual subjects (i.e., across ages), they yield data that can be analyzed for changing patterns of relationships between variables for each individual, and the comparability of the subjects comprising the different age groups is guaranteed (Friedrich & Van Horn, 1976, p. 24, citing Wohlwill, 1969). Problems inherent in classical longitudinal research such as confounds between ages and cohorts were solved by using a cohort-sequential design (Schaie, 1965). Actually, our design was an incomplete cohort-sequential design since not all of the cohorts were tested at all ages.

A third principal consideration in planning the study was the fact that no in-depth description was available of the differential learning experiences of males and females in the classroom. There was a clear need to know how teachers respond to children, how children respond to children, and what the consequences of these actions are.

In sum, an extensive study of sex-role differentiation during the preschool years was needed, and the investigation described in this manuscript was to serve this purpose.

The study used an (incomplete) cohort-sequential design, following more than 400 3-, 4-, and 5-year-old boys and girls for various portions of their nursery-school careers. Children in ten 3-year-old classes at the time of the first year's data collection in 1975-1976 (Cohort, or Birthyear, 1973) were tested and observed for three years (1975-1976; 1976-1977; 1977-1978). Children in eight 4-year-old classes (Cohort 1972) were followed for two years (1975-1976; 1976-1977), while those in six 5-year-old classes (Cohort 1971) participated only in 1975-1976. Within each age level, the classes were equally divided between lower-income-level schools (public daycare centers with a sliding fee scale) and middle-income-level schools (private nursery schools with fees ranging from $550 to $650 for ten months, in 1975).

Information on sex-role differentiation was available from two sources. First, the children were pretested and posttested each year on five measures of sex-role development (and one measure of intelligence). Additionally, the child-, teacher-, child-child, and teacher-child behaviors were observed at two- to three-week intervals in the naturalistic environment of the preschool classrooms. Thus, the study had three major parts: pretests, observations, and posttests. Information on personal, socioeconomic, and sibling characteristics was also available (See Chapter IV).

The sampling structure of the incomplete cohort-sequential design is shown in Table 1, while the procedures used within each year are shown in Table 2.

Table 1

Sampling Structure of the (Incomplete) Cohort-

Sequential Design of the Sex-Role Socialization Study

Cohort (Birthyear)	Age of Child: Early 3	Late 3	Early 4	Late 4	Early 5	Late 5
1971	--	--	--	--	1975F OBS	1976S
1972	--	--	1975F OBS	1976S	1976F OBS	1977S
1973	1975F OBS	1976S	1976F OBS	1977S	1977F OBS	1978S

Note: Entries in the table give the Time of Measurement. F and S designate Fall and Spring test administration, respectively. OBS signifies the observations.

Table 2

Measures Used Within Each Year of the Sex-Role Study

Pretests	Observations	Posttests
Sex-Role Measures	Child Behaviors →	Sex-Role Measures
	Teacher Responses	
Intelligence Test	Teacher Behaviors →	Intelligence Test
	Child Responses	
	Child Behaviors →	
	Child Responses	

The tests are described in Chapter V, the observations in Chapter VI. Chapter IV describes the subjects.

Chapter IV

SUBJECTS (Children and Teachers)

Personal, Socioeconomic, and Sibling Characteristics of Children

The number of subjects differs from year to year in the present study. Ideally, the only decreases would have resulted from the design, which called for children who were 3-, 4-, and 5-years-old at the beginning of the study to participate for three, two, and one year, respectively. However, subject attrition was also attributable to factors such as children moving out of New York City, children dropping out of school, and children changing to a school that would not permit research. This latter cause most frequently arose as a direct response to cuts in New York City's education budget.

Information regarding personal, socioeconomic, and sibling characteristics was obtained from school records and members of the school staff (e.g., family service workers in the lower income schools, teachers, and school directors), with written and oral information cross-checked for accuracy. Complete information concerning these characteristics was not available for all subjects, as is reflected in the varying N's. Whenever available, the following information (categorized as used in analyses) was obtained for each child:

Definitions

Sex

1 = Male
2 = Female

Child Ethnicity

1 = White
2 = Black
3 = Hispanic
4 = Oriental
5 = Other
(For many of the analyses, categories 3-5 were combined into "Other" because of the small numbers of subjects.)

Age

In months

School Income Level

1 = Lower-Income level - Public daycare with a sliding fee scale
2 = Middle-Income level - Private nurseries with tuition between $550 and $650 for ten months.

Length of Time in Present School

1 = 1-2 months
2 = 3-5 months

3 = 6-8 months
4 = First full year in school
5 = Second full year in school
6 = Third full year in school
7 = Fourth full year in school (this sometimes, though rarely, applied in daycare.)

Intactness of Family (whether both parents were in the home)

1 = Only one parent in home, non-intact
2 = Both parents in home, intact

Parental Figure in Home

1 = Mother only in home
2 = Father only in home
3 = Mother and father in home
4 = Grandparent only in home
5 = Other adult only

Brothers

Number of younger brothers: 0-8
Number of older brothers: 0-8
Total number of brothers: 0-8
(For many of the analyses this was recoded into the categories 0,1, 2 or more.)

Sisters

Number of younger sisters: 0-8
Number of older sisters: 0-8
Total number of sisters: 0-8
(For many of the analyses this was recoded into the categories 0,1, 2 or more.)

Sibling Sex (Sibship)

1 = Only child
2 = Only brothers
3 = Only sisters
4 = Both brothers and sisters

Sibling Constellation

01 = Only child
02 = Older brother only
03 = Younger brother only
04 = Older and younger brother
05 = Older sister only
06 = Younger sister only
07 = Older and younger sister
08 = Older brother and sister
09 = Younger brother and sister
10 = Older brother and younger sister
11 = Younger brother and older sister
12 = Older and younger brother, and younger sister

13 = Older and younger brother, and older sister
14 = Older and younger sister, and younger brother
15 = Older and younger sister, and older brother
16 = Older brother, younger sister, older sister, and younger sister

Total Number of Children in Family

0-8
(For many of the analyses this was recoded into the categories 1,2, 3 or more.)

Ordinal Position

1 - 8
(For many of the analyses this was recoded as 1 = first-born, 2 = second-born, 3 = third or later born.)

Mother's Work Status

1 = Not working (includes mothers who don't work, are unemployed, or who are students in vocational or academic schools.)
2 = Employed (includes mothers who were engaged in part- or full-time paid employment; all mothers were employed at least 15 hours/week.)

Father's Work Status

1 = Not working (includes fathers who don't work, are unemployed, or who are vocational or academic students.)
2 = Employed (includes fathers who were engaged in part- or full-time paid employment.)

Mother's Occupation; Father's Occupation

Each was separately classified according to the occupational levels of Hollingshead's (1957) Two Factor Index of Social Position
1 = Higher executives, proprietors of large concerns, and major professionals
2 = Business managers, proprietors of medium-sized businesses, and lesser professionals
3 = Administrative personnel, small independent businesses, and minor professionals
4 = Clerical and sales workers, technicians, and owners of little businesses (under $6,000)
5 = Skilled Manual Employees
6 = Machine operators and semi-skilled employees
7 = Unskilled employees (In a modification of Hollingshead, individuals who were on relief were not included in this category.
(Occupation was categorized whenever the information was available, even when the parent was not working at that particular time.) (For many of the analyses, this was recoded as 1 = 1 and 2, Professional, managerial; 2 = 3 and 4, White, Blue Collar; and 3 = 5,6 and 7, Semi- or Unskilled.)

Source of Income

1 = Mother works, only
2 = Father works, only
3 = Mother and father both work
4 = Unemployment compensation
5 = Aid to Dependent Children, Social Service

Tables Describing the Personal, Socioeconomic, and Sibling Characteristics of the Subjects

The nature of this study is such that a large number of subsamples (both within and between years) may be described, rather than one single sample. For example, even within a single year, some (and only a few!) of the possible subsamples would include: Children who were (1) pretested on any test; (2) posttested on any test; (3) pretested or posttested on any test; (4) pretested and posttested on any test; (5) pretested and posttested on the same test; (6) pretested on at least 2 (3,4, or 5) sex-role tests; (7) posttested on at least 2 (3,4, or 5) tests; (8) pretested and posttested on at least 2 (3,4, or 5) tests; (9) observed at least once; (10) observed 2 (3,4,5,6,7, or 8) times; (11) pretested on any test, posttested on any test, or observed at least once; and so on. The number of possible subsamples is almost astronomical when possible permutations and combinations of factors such as the following are considered: (1) within each year, one intelligence and five sex-role pretests, one intelligence and five sex-role posttests, eight observations; (2) one, two, or three years of data collection as specified by the design; (3) attrition due to children dropping out of or changing schools; (4) absence when testing and/or observing occurred; and (5) unwillingness to complete some or all of the tests.

We have very carefully considered these possible subsamples and have chosen four which we regard as most representative, crucial, and meaningful to describe in depth. Most of the work presenting the results of this investigation will deal with these four samples. The personal, socioeconomic, and sibling characteristics of these four samples are presented in detail in Tables 3-45. These samples are (1) Year One Master Sample, (2) Year One: Within Year Longitudinal Test Sample, (3) Year Two Master Sample; and (4) Year Three Master Sample. Tables 3-13 describe the characteristics of the Year One Master Sample, that is, children who took any pretest, or any posttest, or were observed at least once during the first year of the study (1975-1976). In other words, the Master Sample includes all children for whom there was a test score or an observation. Tables 14-24 present the information for those Year One subjects who took both Fall and Spring versions of at least one test: the Year One: Within Year Longitudinal Test Sample. A detailed description of this sample is included because the large N within Year One will be most useful for our future treatments of within-year change and its relation to the nursery-school environment. In Tables 25-35, the Year Two Master Sample is described. This sample is comprised of all subjects who took any pretest, any posttest, or were observed at least once during the second year (1976-1977). Since no new subjects were added during the second year, all children in this sample also had participated during the first year. Thus, the Year Two Master Sample may also be thought of as the Between Years One and Two Longitudinal Master Sample. The fourth major sample, the Year Three Master Sample, is described in Tables 36-45. All children who were tested on any pretest or posttest or were observed at least once during year three (1977-1978) are included. Although two children participated in years one and three, (but not year two) for all practical purposes, the Year Three Master Sample also comprises the Between Years One, Two, and Three Longitudinal Master Sample (subjects who participated in all three years).

In all of the tables that follow, the data have been grouped by school income level (middle or lower), sex and age. Class breakdowns are given just for overall N's. A number of things should be noted in regard to the tables. First, the classification of children into classes and age groups was carried out after the fact on the basis of where the child was for the posttest in a

given year. Especially within the lower income level schools, there was a great deal of movement from class to class within the year. This occurred because assignment to a class in daycare, which is in session year round, was usually based on the age of the child: When the child's age changed, so did his or her class. In contrast, class (age group) assignments in the private nursery schools was based on the academic year. Second, differing N's between parallel tables in this monograph resulted from factors such as incomplete information on the subject, unuseable scores (e.g., the test may have been administered but the results indicated the subject's responses were random and/or nonsensical), or subjects not having been tested and/or observed. Third, tables showing only the numbers of subjects comprising particular testing and observation samples have been included in the chapters dealing with each of these methods.

The specific personal, socioeconomic, and sibling characteristics of the four major samples may be found in the following tables:

	Table Numbers			
	Year One Master Sample	Year One Within Year Longitudinal Test Sample	Year Two Master Sample	Year Three Master Sample
Number of Subjects by Class, School Income Level, and Sex	3	14	25	36
THE FOLLOWING ARE ORGANIZED BY SCHOOL INCOME LEVEL, SEX, AND AGE				
Number of Subjects	4	15	26	26
Mean Fall Peabody Vocabulary Test Scores and Mean Spring Peabody Vocabulary Test Scores	5	16	27	37
Number of Children in Each Ethnic Group	6	17	28	38
Mean Age and Number of Children from Intact and Non-intact Families	7	18	29	39
Number of Employed and Nonemployed Mothers and Fathers	8	19	30	40
Number of Mothers in Each Hollingshead Occupational Status Group	9	20	31	41
Number of Fathers in Each Hollingshead Occupational Status Group	10	21	32	42

	Table Numbers			
	Year One Master Sample	Year One Within Year Longitudinal Test Sample	Year Two Master Sample	Year Three Master Sample
Number of Subjects Provided For by Various Sources of Income	11	22	33	43
Mean Number of Brothers, Sisters, Children in Family, and Ordinal Position	12	23	34	44
Number of Subjects in Each Sibling Constellation	13	24	35	45

The 1975-77 fiscal crisis in New York City forced the closing of many day care centers and the curtailment of services of others. (For example, one of our schools was reduced from 162 to 100 children). Consequently, a number of children who participated in the study during the first year were dispersed to new schools. Additionally, some children moved to new schools within New York City because their family changed residence or because their parents expressed preference for a different school.

Rather than lose these subjects, permission was solicited from the children's parents to follow the children to their new schools. After obtaining the parents' permission, the new schools were contacted in order to obtain their cooperation. Thus, whenever possible, we followed the child into the new school, with both testing and (fewer) observations. During the second year, 18 new schools were included in the study.

The same procedure was followed in year 3 as had been followed in year 2 for tracing the third year-children into new schools. During the third year, 12 new schools were included in the study.

Table 3

Number of Subjects in Each Class By School SES by Sex

(Year One Master Sample)

School I.D.	Class I.D.	Age Group	No. of Males	No. of Females	Total
Middle Income					
01	01	3	8	9	17
01	02	4	9	8	17
01	03	5	9	10	19
02	04	3	7	10	17
02	06	3	9	9	18
02	05	3	12	8	20
02	07	4	14	7	21
02	08	4	9	11	20
02	10	5	5	8	13
02	09	5	13	13	26
03	11	3	10	6	16
03	12	4	14	5	19
	Total		119	104	223
	Mean		9.92	8.67	18.59

Table 3 (Cont.)

Number of Subjects in Each Class By School SES by Sex

(Year One Master Sample)

School I.D.	Class I.D.	Age Group	No. of Males	No. of Females	Total
Lower Income					
07	16	3	13	8	21
07	17	4	16	13	29
08	18	3	11	13	24
09	19	3	8	10	18
09	20	4	13	9	22
10	21	3	10	8	18
10	22	4	10	15	25
10	23	5	13	13	26
11	24	5	17	12	29
12	25	3	13	13	26
12	26	4	11	15	26
12	27	5	8	18	26
	Total		143	147	290
	Mean		11.91	12.25	24.16
Total Sample			262	251	513
Grand Mean			10.91	10.45	21.36

Table 4

Number of Subjects Tested on at Least One Pretest or One Posttest or Observed at Least Once, by School Income Level, Sex, and Age: Year One

School Income Level	Males	Females	Total
Low Income	119	104	223
3 Year Olds	46	42	88
4 Year Olds	46	31	77
5 Year Olds	27	31	58
Middle Income	143	147	290
3 Year Olds	55	52	107
4 Year Olds	50	52	102
5 Year Olds	38	43	81
Total Sample	262	251	513
3 Year Olds	101	94	195
4 Year Olds	96	83	179
5 Year Olds	65	74	139

Table 5

Mean Fall Peabody Vocabulary Test Scores, Mean Spring Peabody Vocabulary Test Scores, By School SES, by Sex, by Age

(Year One Master Sample)

	Peabody Vocabulary Test					
	Fall			Spring		
	Mean	SD	N	Mean	SD	N
Lower Income	92.50	17.12	206	94.95	18.58	187
Males	92.30	18.40	102	96.84	18.05	95
3 Year Olds	82.06	14.18	32	89.96	15.01	27
4 Year Olds	92.24	17.26	38	95.76	18.68	37
5 Year Olds	102.62	18.12	32	104.13	17.55	31
Females	92.70	15.85	104	93.00	19.01	92
3 Year Olds	90.77	16.77	39	87.47	18.42	30
4 Year Olds	89.21	15.93	29	91.16	19.20	32
5 Year Olds	97.61	13.84	36	100.50	17.51	30
Middle Income	109.08	17.05	187	111.01	18.43	182
Males	109.79	18.84	94	113.00	18.23	93
3 Year Olds	105.19	21.78	37	109.70	16.13	34
4 Year Olds	110.82	16.89	33	110.80	19.87	35
5 Year Olds	115.46	15.04	24	120.88	16.87	24
Females	108.36	15.10	93	108.92	18.50	89
3 Year Olds	108.54	16.81	35	111.52	18.60	33
4 Year Olds	112.11	11.97	28	109.78	17.95	27
5 Year Olds	104.67	15.20	30	105.17	18.92	29
Total Sample	100.39	18.97	393	102.87	20.15	369

Table 6

Number of Children in Each Ethnic Group,

By School SES, by Sex, by Age

(Year One Master Sample)

	Child Ethnicity				
	White	Black	Hispanic	Oriental	Other
Lower Income	74	123	51	10	11
Males	30	62	32	6	7
3 Year Olds	10	26	14	3	1
4 Year Olds	6	21	15	0	3
5 Year Olds	14	15	3	3	3
Females	44	61	19	4	4
3 Year Olds	16	24	5	4	1
4 Year Olds	12	20	10	0	2
5 Year Olds	16	17	4	0	1
Middle Income	132	69	11	8	4
Males	67	36	7	7	3
3 Year Olds	25	16	5	2	1
4 Year Olds	25	12	1	4	1
5 Year Olds	17	8	1	1	1
Females	65	33	4	1	1
3 Year Olds	27	9	4	0	0
4 Year Olds	22	9	0	1	1
5 Year Olds	16	15	0	0	0
Total Sample	206	192	62	18	15

Table 7

Mean Age and Number of Children from Intact (Both Parents Present) and Non-Intact Families, By School SES, by Sex, by Age (Year One Master Sample)

	Age (In Months)			Intactness of Family		
	Mean	SD	N	No	Yes	Total
Lower Income	51.80	9.18	261	178	86	264
Males	51.41	9.02	135	88	48	136
3 Year Olds	42.21	3.98	53	34	20	54
4 Year Olds	53.70	3.57	44	31	13	44
5 Year Olds	61.60	4.85	38	23	15	38
Females	52.21	9.36	126	90	38	128
3 Year Olds	42.61	3.94	49	36	13	49
4 Year Olds	54.13	3.91	39	30	11	41
5 Year Olds	62.60	4.85	38	24	14	38
Middle Income	50.03	10.13	223	52	172	224
Males	50.35	10.16	119	24	96	120
3 Year Olds	41.17	5.22	48	9	40	49
4 Year Olds	52.28	6.41	43	7	36	43
5 Year Olds	63.14	3.72	28	8	20	28
Females	49.65	10.13	104	28	76	104
3 Year Olds	39.10	4.88	40	11	29	40
4 Year Olds	51.76	4.20	33	8	25	33
5 Year Olds	61.03	3.93	31	9	22	31
Total Sample	50.98	9.66	484	230	258	488

Table 8

Number of Employed and Nonemployed Mothers and Fathers,

By School SES, by Sex, by Age

(Year One Master Sample)

	Mother's Work Status			Father's Work Status		
	Nonemployed	Employed	Total	Nonemployed	Employed	Total
Lower Income	95	164	259	28	74	102
Males	51	83	134	13	43	56
3 Year Olds	27	26	53	9	12	21
4 Year Olds	17	27	44	2	12	14
5 Year Olds	7	30	37	2	19	21
Females	44	81	125	15	31	46
3 Year Olds	20	29	49	4	10	14
4 Year Olds	14	25	39	4	10	14
5 Year Olds	10	27	37	7	11	18
Middle Income	111	113	224	32	172	204
Males	54	66	120	21	88	109
3 Year Olds	20	29	49	8	34	42
4 Year Olds	24	19	43	10	31	41
5 Year Olds	10	18	28	3	23	26
Females	57	47	104	11	84	95
3 Year Olds	22	18	40	4	35	39
4 Year Olds	15	18	33	4	26	30
5 Year Olds	20	11	31	3	23	26
Total Sample	206	277	483	60	246	306

Table 9

Number of Mothers in Each Hollingshead Occupational Status Group,

By School SES, by Sex, by Age

(Year One Master Sample)

	Hollingshead Scale Value[a]									
	1	2	3	4	5	6	7	Mean	SD	N
Lower Income	0	12	7	104	8	32	14	4.47	1.25	177
Males	0	4	2	55	3	18	8	4.59	1.21	90
3 Year Olds	0	3	0	15	1	8	3	4.67	1.38	30
4 Year Olds	0	0	0	18	1	7	3	4.83	1.14	29
5 Year Olds	0	1	2	22	1	3	2	4.29	1.05	31
Females	0	8	5	49	5	14	6	4.34	1.29	87
3 Year Olds	0	1	1	21	1	6	2	4.50	1.12	32
4 Year Olds	0	5	3	11	1	7	1	4.18	1.46	28
5 Year Olds	0	2	1	17	3	1	3	4.33	1.23	27
Middle Income	16	46	19	35	1	3	0	2.73	1.19	120
Males	9	27	11	18	1	3	0	2.77	1.25	69
3 Year Olds	3	14	5	6	0	2	0	2.73	1.27	30
4 Year Olds	4	4	3	9	0	1	0	3.00	1.23	21
5 Year Olds	2	9	3	3	1	0	0	2.56	1.05	18
Females	7	19	8	17	0	0	0	2.69	1.06	51
3 Year Olds	3	6	4	6	0	0	0	2.68	1.09	19
4 Year Olds	2	9	4	5	0	0	0	2.60	.97	20
5 Year Olds	2	4	0	6	0	0	0	2.83	1.22	12
Total Sample	16	58	26	139	9	35	14	3.77	1.49	297

[a]Hollingshead Scale Values are as follows: (1) Executives, Major Professionals; (2) Business Managers, Lesser Professionals; (3) Administrative Personnel, Small Business Owners; (4) Clerical, Sales Workers; (5) Skilled Workers; (6) Semi-Skilled Workers; (7) Unskilled Workers.

Table 10

Number of Fathers in Each Hollingshead Occupational Status Group,

By School SES, by Sex, by Age

(Year One Master Sample)

	Hollingshead Scale Value[a]									
	1	2	3	4	5	6	7	Mean	SD	N
Lower Income	3	7	11	19	10	15	15	4.64	1.72	80
Males	1	3	7	12	6	8	10	4.76	1.67	47
3 Year Olds	1	1	0	3	1	4	5	5.27	1.83	15
4 Year Olds	0	0	1	4	1	2	4	5.33	1.44	12
5 Year Olds	0	2	6	5	4	2	1	4.05	1.32	20
Females	2	4	4	7	4	7	5	4.45	1.82	33
3 Year Olds	0	0	0	3	0	3	4	5.80	1.25	10
4 Year Olds	1	0	4	1	2	2	1	4.18	1.70	11
5 Year Olds	1	4	0	3	2	2	0	3.58	1.66	12
Middle Income	88	45	18	13	5	4	0	1.92	1.24	173
Males	48	23	8	7	3	0	0	1.81	1.10	89
3 Year Olds	19	8	4	2	1	0	0	1.76	1.07	34
4 Year Olds	21	6	2	1	1	0	0	1.55	1.24	31
5 Year Olds	8	9	2	4	1	0	0	2.21	1.19	24
Females	40	22	10	6	2	4	0	2.05	1.36	84
3 Year Olds	21	7	5	0	1	1	0	1.74	1.18	35
4 Year Olds	13	6	4	2	0	2	0	2.11	1.45	27
5 Year Olds	6	9	1	4	1	1	0	2.45	1.41	22
Total Sample	91	52	29	22	15	19	15	2.73	1.92	243

[a]Hollingshead Scale Values are as follows: (1) Executives, Major Professionals; (2) Business Managers, Lesser Professionals; (3) Administrative Personnel, Small Business Owners; (4) Clerical, Sales Workers; (5) Skilled Workers; (6) Semi-Skilled Workers; (7) Unskilled Workers.

Table 11

Number of Subjects Provided For by Various Sources of Income,

By School SES, by Sex, by Age

(Year One Master Sample)

	Source of Income				
	Only Mother Works	Only Father Works	Both Parents Work	Unempl. Comp.[a]	S.S. or ADC[b]
Lower Income	120	26	47	50	10
Males	54	13	29	29	6
3 Year Olds	21	7	5	14	4
4 Year Olds	21	4	7	11	1
5 Year Olds	12	2	17	4	1
Females	66	13	18	21	4
3 Year Olds	25	6	4	10	2
4 Year Olds	21	3	7	6	2
5 Year Olds	20	4	7	5	0
Middle Income	42	92	70	16	1
Males	28	44	38	8	1
3 Year Olds	13	16	16	2	1
4 Year Olds	10	20	9	4	0
5 Year Olds	5	8	13	2	0
Females	14	48	32	8	0
3 Year Olds	6	21	11	0	0
4 Year Olds	6	13	12	2	0
5 Year Olds	2	14	9	6	0
Total Sample	162	118	117	66	11

[a]Unemployment Compensation

[b]Supplemental Security Income or Aid to Dependent Children

Table 12

Mean Number of Brothers, Sisters, Children in Family, and Ordinal Position, By School SES, by Sex, by Age

(Year One Master Sample)

		Number of Brothers		Number of Sisters		Number of Children		Ordinal Position	
	N	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Lower Income	263	.52	.80	.48	.80	1.98	1.21	1.72	1.12
Males	135	.56	.86	.47	.82	2.02	1.24	1.76	1.13
3 Year Olds	53	.68	.03	.57	.84	2.24	1.40	2.09	1.26
4 Year Olds	44	.50	.63	.43	.66	1.93	.82	1.64	.86
5 Year Olds	38	.47	.83	.37	.94	1.82	1.39	1.45	1.11
Females	128	.47	.73	.49	.77	1.94	1.18	1.68	1.11
3 Year Olds	49	.39	.73	.45	.71	1.82	1.11	1.65	1.13
4 Year Olds	41	.44	.59	.61	.92	2.02	1.21	1.73	1.10
5 Year Olds	38	.60	.85	.42	.68	2.03	1.24	1.66	1.14
Middle Income	224	.37	.61	.26	.48	1.62	.74	1.37	.65
Males	120	.38	.61	.28	.48	1.64	.75	1.39	.68
3 Year Olds	49	.39	.64	.26	.49	1.65	.83	1.45	.76
4 Year Olds	43	.32	.47	.30	.46	1.63	.62	1.32	.56
5 Year Olds	28	.43	.74	.25	.52	1.64	.83	1.39	.68
Females	104	.36	.62	.24	.47	1.60	.73	1.35	.62
3 Year Olds	40	.25	.54	.22	.42	1.48	.68	1.22	.48
4 Year Olds	33	.42	.56	.27	.52	1.70	.73	1.36	.60
5 Year Olds	31	.42	.76	.23	.50	1.64	.80	1.48	.77
Total Sample	487	.48	.72	.38	.68	1.82	1.04	1.56	.95

Table 13

Number of Subjects in Each Sibling Constellation, By School SES, by Sex, by Age

(Year One Master Sample)

	Sibling Constellation[a]													
	A	B	C	D	E	F	G	H	I	J	K	L	N	O
Lower Income	103	36	14	2	26	15	3	24	38	1	2	0	1	3
Males	49	19	9	2	16	7	2	10	19	0	1	0	0	2
3 Year Olds	15	8	0	1	8	1	1	4	13	0	0	0	0	2
4 Year Olds	13	8	6	0	7	3	1	4	3	0	1	0	0	0
5 Year Olds	21	3	3	1	1	3	0	2	3	0	0	0	0	0
Females	54	17	5	0	10	8	1	14	19	1	1	0	1	1
3 Year Olds	20	7	2	0	6	4	1	4	6	0	0	0	0	0
4 Year Olds	17	4	1	0	3	2	0	5	8	1	1	0	0	1
5 Year Olds	17	6	2	0	1	2	0	5	5	0	0	0	1	0
Middle Income	106	29	20	3	19	17	0	7	22	0	0	1	0	0
Males	53	12	12	3	10	9	0	6	14	0	0	1	0	0
3 Year Olds	23	5	1	2	3	5	0	3	7	0	0	1	0	0
4 Year Olds	16	4	7	0	5	4	0	2	5	0	0	0	0	0
5 Year Olds	14	3	4	1	2	0	0	1	2	0	0	0	0	0
Females	53	17	8	0	9	8	0	1	8	0	0	0	0	0
3 Year Olds	23	3	2	0	4	2	0	0	6	0	0	0	0	0
4 Year Olds	14	7	4	0	1	4	0	1	2	0	0	0	0	0
5 Year Olds	16	7	2	0	4	2	0	0	0	0	0	0	0	0
Total Sample	209	65	34	5	45	32	3	31	60	1	2	1	1	3

[a]Sibling Constellations are as follows: (A) Only Child, (B) Older Brother Only, (C) Younger Brother Only, (D) Older and Younger Brother, (E) Older Sister Only, (F) Younger Sister Only, (G) Older and Younger Sister, (H) Older Brother and Sister, (I) Younger Brother and Sister, (J) Older Brother and Younger Sister, (K) Younger Brother and Older Sister, (L) Older and Younger Brother, and Younger Sister, (N) Older and Younger Sister, and Younger Brother, (O) Older and Younger Sister, and Older Brother.

Table 14

Number of Subjects in Each Class By School SES by Sex

(Year One: Within-Year Longitudinal Test Sample)

School I. D.	Class I. D.	Age Group	No. of Males	No. of Females	Total
Middle	Income				
01	01	3	5	7	12
01	02	4	4	6	10
01	03	5	7	10	17
02	04	3	3	7	10
02	06	3	8	7	15
02	05	3	7	5	12
02	07	4	9	7	16
02	08	4	8	7	15
02	10	5	7	7	14
02	09	5	8	11	19
03	11	3	6	6	12
03	12	4	10	4	14
Total			82	84	166
Mean			6.83	7.00	13.83
Lower	Income				
07	16	3	3	6	9
07	17	4	6	4	10
08	18	3	3	7	10
09	19	3	6	6	12
09	20	4	10	7	17
10	21	3	3	5	8
10	22	4	10	6	16

Table 14 (Cont.)

Number of Subjects in Each Class By School SES by Sex

(Year One: Within-Year Longitudinal Test Sample)

School I. D.	Class I. D.	Age Group	No. of Males	No. of Females	Total
Lower Income					
10	23	5	10	8	18
11	24	5	13	8	21
12	25	3	6	4	10
12	26	4	9	9	18
12	27	5	8	14	22
Total			87	84	171
Mean			7.25	7.00	14.25

Table 15

Number of Subjects Tested on at Least One Pretest or One Posttest, By School SES, Sex, And Age (Year One: Within-Year Longitudinal Test Sample)

School Income Level	Males	Females	Total
Lower Income	87	84	171
3 Year Olds	21	28	49
4 Year Olds	35	26	61
5 Year Olds	31	30	61
Middle Income	82	84	166
3 Year Olds	29	32	61
4 Year Olds	31	24	55
5 Year Olds	22	28	50
Total Sample	169	168	337
3 Year Olds	50	60	110
4 Year Olds	66	50	116
5 Year Olds	53	58	111

Table 16

Mean Fall Peabody Vocabulary Test Scores, Mean Spring Peabody Vocabulary Test Scores, By School SES, by Sex, by Age

(Year One: Within-Year Longitudinal Test Sample)

	Peabody Vocabulary Test					
	Fall			Spring		
	Mean	SD	N	Mean	SD	N
Lower Income	93.96	16.76	163	95.52	18.74	166
Males	96.44	17.04	83	97.62	18.08	85
3 Year Olds	88.05	12.94	21	91.67	15.63	21
4 Year Olds	94.79	16.14	33	95.85	18.61	34
5 Year Olds	104.41	17.64	29	103.80	17.75	30
Females	91.38	16.17	80	93.31	19.27	81
3 Year Olds	87.92	16.36	27	87.04	19.21	26
4 Year Olds	87.83	16.80	23	91.20	19.25	25
5 Year Olds	97.20	14.22	30	100.50	17.51	30
Middle Income	108.83	17.65	163	111.18	18.09	166
Males	109.91	19.91	80	113.71	17.76	82
3 Year Olds	105.90	24.14	29	111.10	16.25	29
4 Year Olds	109.90	17.73	29	112.13	19.44	31
5 Year Olds	115.23	15.57	22	119.36	16.70	22
Females	107.80	15.22	83	108.71	18.17	84
3 Year Olds	108.66	17.13	32	110.81	18.45	32
4 Year Olds	110.70	11.46	23	109.62	16.81	24
5 Year Olds	104.43	15.48	28	105.54	19.16	28
Total Sample	101.40	18.73	326	103.35	19.99	332

Table 17

Number of Children in Each Ethnic Group,

By School SES, by Sex, by Age

(Year One: Within-Year Longitudinal Test Sample)

	Child Ethnicity				
	White	Black	Hispanic	Oriental	Other
Lower Income	49	83	24	6	9
Males	22	39	15	5	6
3 Year Olds	5	10	3	2	1
4 Year Olds	6	17	10	0	2
5 Year Olds	11	12	2	3	3
Females	27	44	9	1	3
3 Year Olds	6	17	3	1	1
4 Year Olds	7	14	4	0	1
5 Year Olds	14	13	2	0	1
Middle Income	98	56	5	3	4
Males	45	29	3	2	3
3 Year Olds	14	12	2	0	1
4 Year Olds	18	10	0	2	1
5 Year Olds	13	7	1	0	1
Females	53	27	2	1	1
3 Year Olds	22	8	2	0	0
4 Year Olds	15	7	0	1	1
5 Year Olds	16	12	0	0	0
Total Sample	147	139	29	9	13

Table 18

Mean Age and Number of Children from Intact (Both Parents Present) and Non-Intact Families, By School SES, by Sex, by Age (Year One: Within-Year Longitudinal Test Sample)

	Age (Months)			Intactness of Family		
	Mean	SD	N	No	Yes	Total
Lower Income	53.63	8.51	171	119	52	171
Males	54.14	7.91	87	58	29	87
3 Year Olds	43.95	3.51	21	12	9	21
4 Year Olds	53.48	3.44	35	27	8	35
5 Year Olds	61.77	4.93	31	19	12	31
Females	53.11	9.10	84	61	23	84
3 Year Olds	42.39	3.58	28	21	7	28
4 Year Olds	54.46	3.56	26	20	6	26
5 Year Olds	61.93	4.62	30	20	10	30
Middle Income	50.65	10.05	166	42	124	166
Males	51.33	9.82	82	15	67	82
3 Year Olds	41.24	5.36	29	4	25	29
4 Year Olds	52.61	5.24	31	4	27	31
5 Year Olds	62.82	3.65	22	7	15	22
Females	49.99	10.29	84	27	57	84
3 Year Olds	39.19	4.79	32	11	21	32
4 Year Olds	51.29	3.78	24	8	16	24
5 Year Olds	61.21	4.06	28	8	20	28
Total Sample	52.16	9.41	337	161	176	337

Table 19

Number of Employed and Nonemployed Mothers and Fathers

By School SES, by Sex, by Age

(Year One: Within-Year Longitudinal Test Sample)

	Mother's Work Status			Father's Work Status		
	Nonemployed	Employed	Total	Nonemployed	Employed	Total
Lower Income	44	123	167	18	51	69
Males	21	65	86	6	31	37
3 Year Olds	6	15	21	5	5	10
4 Year Olds	11	24	35	0	9	9
5 Year Olds	4	26	30	1	17	18
Females	23	58	81	12	20	32
3 Year Olds	10	18	28	3	6	9
4 Year Olds	6	18	24	3	5	8
5 Year Olds	7	22	29	6	9	15
Middle Income	84	82	166	26	126	152
Males	38	44	82	17	59	76
3 Year Olds	14	15	29	6	19	25
4 Year Olds	17	14	31	8	22	30
5 Year Olds	7	15	22	3	18	21
Females	46	38	84	9	67	76
3 Year Olds	18	14	32	4	27	31
4 Year Olds	11	13	24	3	18	21
5 Year Olds	17	11	28	2	22	24
Total Sample	128	205	333	44	177	221

Table 20

Number of Mothers in Each Hollingshead Occupational Status Group, By School SES, by Sex, by Age

(Year One: Within-Year Longitudinal Test Sample)

	Hollingshead Scale Value[a]									
	1	2	3	4	5	6	7	Mean	SD	N
Lower Income	0	8	6	84	4	18	8	4.33	1.16	128
Males	0	3	2	44	2	12	5	4.48	1.18	68
3 Year Olds	0	2	0	9	0	4	1	4.44	1.41	16
4 Year Olds	0	0	0	16	1	5	3	4.80	1.16	25
5 Year Olds	0	1	2	19	1	3	1	4.22	1.01	27
Females	0	5	4	40	2	6	3	4.15	1.13	60
3 Year Olds	0	1	1	12	1	4	0	4.32	1.06	19
4 Year Olds	0	3	2	11	0	2	1	3.95	1.31	19
5 Year Olds	0	1	1	17	1	0	2	4.18	1.05	22
Middle Income	11	30	12	33	1	1	0	2.85	1.17	88
Males	6	16	7	16	1	1	0	2.85	1.21	47
3 Year Olds	1	5	4	5	0	1	0	3.06	1.24	16
4 Year Olds	3	3	2	8	0	0	0	2.94	1.24	16
5 Year Olds	2	8	1	3	1	0	0	2.53	1.19	15
Females	5	14	5	17	0	0	0	2.85	1.12	41
3 Year Olds	1	5	3	6	0	0	0	2.93	1.03	15
4 Year Olds	2	5	2	5	0	0	0	2.77	1.17	14
5 Year Olds	2	4	0	6	0	0	0	2.83	1.27	12
Total Sample	11	38	18	117	5	19	8	3.73	1.37	216

[a]Hollingshead Scale Values are as follows: (1) Executives, Major Professionals; (2) Business Managers, Lesser Professionals; (3) Administrative Personnel, Small Business Owners; (4) Clerical, Sales Workers; (5) Skilled Workers; (6) Semi-Skilled Workers; (7) Unskilled Workers.

Table 21

Number of Fathers in Each Hollingshead Occupational Status Group, By School SES, by Sex, by Age

(Year One: Within-Year Longitudinal Test Sample)

	Hollingshead Scale Value[a]									
	1	2	3	4	5	6	7	Mean	SD	N
Lower Income	2	6	8	15	6	7	11	4.49	1.77	55
Males	1	3	7	10	3	2	8	4.44	1.78	34
3 Year Olds	1	1	0	3	0	0	3	4.50	2.33	8
4 Year Olds	0	0	1	4	0	0	4	5.22	1.72	9
5 Year Olds	0	2	6	3	3	2	1	4.00	1.46	17
Females	1	3	1	5	3	5	3	4.57	1.80	21
3 Year Olds	0	0	0	2	0	2	2	5.67	1.37	6
4 Year Olds	0	0	1	0	2	1	1	5.20	1.48	5
5 Year Olds	1	3	0	3	1	2	0	3.60	1.78	10
Middle Income	64	30	12	13	5	3	0	1.99	1.32	127
Males	34	11	5	7	3	0	0	1.90	1.26	60
3 Year Olds	11	3	2	2	1	0	0	1.90	1.29	19
4 Year Olds	16	2	2	1	1	0	0	1.59	1.14	22
5 Year Olds	7	6	1	4	1	0	0	2.26	1.33	19
Females	30	19	7	6	2	3	0	2.08	1.37	67
3 Year Olds	17	5	3	0	1	1	0	1.74	1.29	27
4 Year Olds	7	5	3	2	0	2	0	2.33	1.61	19
5 Year Olds	6	9	1	4	1	0	0	2.29	1.23	21
Total Sample	66	36	20	28	11	10	11	2.75	1.86	182

[a]Hollingshead Scale Values are as follows: (1) Executives, Major Professionals; (2) Business Managers, Lesser Professionals; (3) Administrative Personnel, Small Business Owners; (4) Clerical, Sales Workers; (5) Skilled Workers; (6) Semi-Skilled Workers; (7) Unskilled Workers.

Table 22

Number of Subjects Provided For by Various Sources of Income,

By School SES, by Sex, by Age

(Year One: Within-Year Longitudinal Test Sample)

	Source of Income				
	Only Mother Works	Only Father Works	Both Parents Work	Unempl. Comp.[a]	S.S. or ADC[b]
Lower Income	92	16	33	5	24
Males	44	7	22	2	12
3 Year Olds	13	3	2	1	2
4 Year Olds	19	2	6	0	8
5 Year Olds	12	2	14	1	2
Females	48	9	11	3	12
3 Year Olds	14	3	3	1	6
4 Year Olds	17	2	3	1	3
5 Year Olds	17	4	5	1	3
Middle Income	33	70	48	3	12
Males	20	31	24	1	6
3 Year Olds	8	11	7	1	2
4 Year Olds	7	14	7	0	3
5 Year Olds	5	6	10	0	1
Females	13	39	24	2	6
3 Year Olds	6	17	7	2	0
4 Year Olds	5	9	8	0	2
5 Year Olds	2	13	9	0	4
Total Sample	125	86	81	8	36

[a]Unemployment Compensation

[b]Supplemental Security Income or Aid to Dependent Children

Table 23

Mean Number of Brothers, Sisters, Children in Family, and Ordinal Position, By School SES, by Sex, by Age (Year One: Within-Year Longitudinal Test Sample)

		Number of Brothers		Number of Sisters		Number of Children		Ordinal Position	
	N	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Lower Income	171	.42	.68	.47	.82	1.88	1.20	1.67	1.08
Males	87	.41	.66	.52	.89	1.93	1.27	1.73	1.18
3 Year Olds	21	.57	.92	.81	.93	2.38	1.60	2.24	1.48
4 Year Olds	35	.43	.56	.46	.70	1.88	.83	1.66	.90
5 Year Olds	31	.29	.53	.39	1.02	1.68	1.40	1.48	1.18
Females	84	.43	.72	.42	.75	1.83	1.12	1.61	.97
3 Year Olds	28	.25	.52	.43	.69	1.68	.82	1.57	.74
4 Year Olds	26	.35	.56	.50	.95	1.81	1.23	1.58	.99
5 Year Olds	30	.67	.92	.33	.61	2.00	1.26	1.67	1.15
Middle Income	166	.38	.63	.26	.47	1.64	.76	1.38	.64
Males	82	.43	.63	.30	.51	1.72	.77	1.41	.68
3 Year Olds	29	.41	.63	.28	.53	1.69	.85	1.45	.74
4 Year Olds	31	.42	.50	.35	.49	1.77	.62	1.35	.61
5 Year Olds	22	.45	.80	.27	.55	1.68	.89	1.45	.74
Females	84	.34	.63	.21	.41	1.56	.73	1.34	.61
3 Year Olds	32	.22	.49	.25	.44	1.47	.67	1.25	.51
4 Year Olds	24	.42	.58	.21	.41	1.62	.77	1.38	.58
5 Year Olds	28	.43	.79	.18	.39	1.61	.79	1.43	.74
Total Sample	337	.40	.66	.36	.68	1.76	1.01	1.53	.91

Table 24

Number of Subjects in Each Sibling Constellation, By School SES, by Sex, by Age

(Year One: Within-Year Longitudinal Test Sample)

	Sibling Constellation[a]													
	A	B	C	D	E	F	G	H	I	J	K	L	N	O
Lower Income	82	25	10	0	18	12	2	15	2	1	1	0	1	2
Males	40	11	7	0	11	6	1	10	0	0	0	0	0	1
3 Year Olds	8	2	0	0	4	1	1	4	0	0	0	0	0	1
4 Year Olds	11	6	5	0	6	3	0	4	0	0	0	0	0	0
5 Year Olds	21	3	2	0	1	2	0	2	0	0	0	0	0	0
Females	42	14	3	0	7	6	1	5	2	1	1	0	1	1
3 Year Olds	14	5	0	0	4	3	1	1	0	0	1	0	1	0
4 Year Olds	14	3	1	0	2	2	0	1	0	1	0	0	0	1
5 Year Olds	14	6	2	0	1	1	0	3	2	0	0	0	0	0
Middle Income	84	24	15	3	15	14	0	6	4	0	0	1	0	0
Males	37	9	11	3	7	8	0	5	1	0	0	1	0	0
3 Year Olds	15	4	1	2	1	4	0	2	0	0	0	0	0	0
4 Year Olds	10	3	7	0	4	4	0	2	1	0	0	0	0	0
5 Year Olds	12	2	3	1	2	0	0	1	0	0	0	1	0	0
Females	47	15	4	0	8	6	0	1	3	0	0	0	0	0
3 Year Olds	20	3	1	0	4	2	0	0	2	0	0	0	0	0
4 Year Olds	12	6	1	0	1	2	0	1	1	0	0	0	0	0
5 Year Olds	15	6	2	0	3	2	0	0	0	0	0	0	0	0
Total Sample	166	49	25	3	33	26	2	21	6	1	1	1	1	2

[a]Sibling Constellations are as follows: (A) Only Child, (B) Older Brother Only, (C) Younger Brother Only, (D) Older and Younger Brother, (E) Older Sister Only, (F) Younger Sister Only, (G) Older and Younger Sister, (H) Older Brother and Sister, (I) Younger Brother and Sister, (J) Older Brother and Younger Sister, (K) Younger Brother and Older Sister, (L) Older and Younger Brother, and Younger Sister, (N) Older and Younger Sister, and Younger Brother, (O) Older and Younger Sister, and Older Brother.

Table 25

Number of Subjects in Each Class By School SES by Sex

(Year Two Master Sample)

School I.D.	Class I.D.	Age Group	No. of Males	No. of Females	Total
Middle Income					
01	28	4	5	6	11
01	29	5	6	5	11
02	32	3	2	4	6
02	33	4	6	10	16
02	31	4	7	8	15
02	30	5	10	7	17
03	34	3	4	0	4
03	35	4	4	1	5
	Total		44	41	85
	Mean		5.50	5.12	10.62

Table 25 (Cont.)

Number of Subjects in Each Class By School SES by Sex

(Year Two Master Sample)

School I.D.	Class I.D.	Age Group	No. of Males	No. of Females	Total
Lower Income					
07	36	3	3	2	5
07	37	4	9	7	16
07	38	5	11	11	22
08	39	3	1	1	2
08	40	4	5	9	14
09	41	3	1	0	1
09	42	4	6	6	12
09	43	5	10	4	14
10	44	4	5	5	10
10	45	5	7	10	17
12	46	3	1	2	3
12	47	4	7	6	13
12	48	5	11	7	18
	Total		77	70	147
	Mean		5.92	5.38	11.30
Total Sample			121	111	232
Grand Mean			5.76	5.28	11.04

Table 25 (Cont.)

Number of Subjects in Each Class By School SES by Sex

(Year Two Master Sample)

School I.D.	Class I.D.	Age Group	No. of Males	No. of Females	Total
Middle Income					
13	49		0	1	1
13	50		0	1	1
14	51		0	1	1
15	52		1	0	1
16	53		0	1	1
17	54		1	0	1
18	55		1	0	1
19	56		0	1	1
20	57		0	1	1
21	58		0	1	1
23	60		1	0	1
23	61		1	0	1
25	63		0	1	1
26	64		1	0	1
28	66		0	1	1
28	67		1	0	1
	Total		7	9	16
Lower Income					
27	65		0	1	1
	Total		0	1	1
Total Sample			7	10	17

Table 26

Number of Subjects Tested on At Least One Pretest or One Posttest or Observed At Least Once, by School Income Level, Sex, and Age: Years Two and Three

School Income Level	Males	Females	Total
Year 2			
Low Income	77	71	148
4 Year Olds	38	38	76
5 Year Olds	39	33	72
Middle Income	52	51	103
4 Year Olds	31	34	65
5 Year Olds	21	17	38
Total Sample	129	122	251
4 Year Olds	69	72	141
5 Year Olds	60	50	110
Year 3			
Low Income			
5 Year Olds	25	21	46
Middle Income			
5 Year Olds	19	21	40
Total Sample	44	42	86

Table 27

Mean Fall Peabody Vocabulary Test Scores, Mean Spring Peabody Vocabulary Test Scores, By School SES, by Sex, by Age

(Year Two Master Sample)

	Peabody Vocabulary Test					
	Fall			Spring		
	Mean	SD	N	Mean	SD	N
Lower Income	89.50	16.42	100	91.91	18.20	109
Males	89.51	16.94	55	93.45	17.57	58
4 Year Olds	84.14	15.40	22	90.91	16.28	22
5 Year Olds	93.09	17.19	33	95.00	18.36	36
Females	89.49	15.96	45	90.16	18.91	51
4 Year Olds	88.85	15.94	27	88.71	18.92	24
5 Year Olds	90.44	16.93	18	91.44	19.65	27
Middle Income	107.10	19.38	86	111.12	17.37	93
Males	104.98	22.63	42	107.98	19.17	44
4 Year Olds	103.40	23.48	25	108.29	16.90	24
5 Year Olds	107.29	22.12	17	107.60	22.64	20
Females	109.14	15.67	44	113.94	15.23	49
4 Year Olds	107.46	17.03	24	114.00	17.95	25
5 Year Olds	111.15	14.86	20	113.88	12.32	24
Total Sample	97.64	19.86	186	100.75	20.20	202

Table 28

Number of Subjects in Each Ethnic Group,

By School SES, by Sex, by Age

(Year Two Master Sample)

	Child Ethnicity				
	White	Black	Hispanic	Oriental	Other
Lower Income	33	68	30	7	5
Males	14	35	22	3	3
4 Year Olds	8	16	10	3	1
5 Year Olds	6	19	12	0	2
Females	19	33	8	4	2
4 Year Olds	11	15	3	4	1
5 Year Olds	8	18	5	0	1
Middle Income	66	31	3	5	1
Males	31	17	1	4	1
4 Year Olds	17	9	1	1	1
5 Year Olds	14	8	0	3	0
Females	35	14	2	1	0
4 Year Olds	20	6	2	0	0
5 Year Olds	15	8	0	1	0
Total Sample	99	99	33	12	6

Table 29

Mean Age and Number of Children from Intact (Both Parents Present) and Non-Intact Families, By School SES, by Sex, by Age (Year Two Master Sample)

	Age (In Months)			Intactness of Family		
	Mean	SD	N	No	Yes	Total
Lower Income	59.93	7.20	137	91	47	138
Males	59.66	7.00	76	50	26	76
4 Year Olds	53.87	4.29	38	22	16	38
5 Year Olds	65.45	3.41	38	28	10	38
Females	60.26	7.50	61	41	21	62
4 Year Olds	54.85	4.26	33	22	11	33
5 Year Olds	66.64	5.09	28	19	10	29
Middle Income	57.71	8.15	106	24	82	106
Males	58.13	8.89	54	7	47	54
4 Year Olds	52.31	4.98	29	5	24	29
5 Year Olds	64.88	7.56	25	2	23	45
Females	57.27	7.36	52	17	35	52
4 Year Olds	51.79	4.78	28	10	18	28
5 Year Olds	63.67	3.54	24	7	17	24
Total Sample	58.96	7.69	243	115	129	244

Table 30

Number of Employed and Nonemployed Mothers and Fathers

By School SES, by Sex, by Age

(Year Two Master Sample)

	Mother's Work Status			Father's Work Status		
	Nonemployed	Employed	Total	Nonemployed	Employed	Total
Lower Income	52	85	137	15	35	50
Males	31	44	75	8	20	28
4 Year Olds	17	20	37	7	10	17
5 Year Olds	14	24	38	1	10	11
Females	21	41	62	7	15	22
4 Year Olds	12	21	33	4	8	12
5 Year Olds	9	20	29	3	7	10
Middle Income	56	51	107	16	81	97
Males	26	29	55	9	40	49
4 Year Olds	12	17	29	3	23	26
5 Year Olds	14	11	25	6	17	23
Females	30	22	52	7	41	48
4 Year Olds	17	11	28	4	23	27
5 Year Olds	13	11	24	3	18	21
Total Sample	108	136	244	31	116	147

Table 31

Number of Mothers in Each Hollingshead Occupational Status Group,

By School SES, by Sex, by Age

(Year Two Master Sample)

	Hollingshead Scale Value[a]									
	1	2	3	4	5	6	7	Mean	SD	N
Lower Income	0	4	1	55	3	22	8	4.67	1.21	93
Males	0	2	0	27	2	12	6	4.82	1.26	49
4 Year Olds	0	2	0	10	1	6	3	4.82	1.43	22
5 Year Olds	0	0	0	17	1	6	3	4.81	1.14	27
Females	0	2	1	28	1	10	2	4.50	1.14	44
4 Year Olds	0	0	1	17	0	4	0	4.32	.81	22
5 Year Olds	0	2	0	11	1	6	2	4.68	1.37	22
Middle Income	9	19	7	18	0	1	0	2.70	1.20	54
Males	6	10	4	9	0	1	0	2.67	1.26	30
4 Year Olds	3	8	2	4	0	1	0	2.61	1.30	18
5 Year Olds	2	2	2	5	0	0	0	2.91	1.16	11
Females	3	9	3	9	0	0	0	2.75	1.09	24
4 Year Olds	2	4	1	5	0	0	0	2.75	1.17	12
5 Year Olds	1	5	2	4	0	0	0	2.75	1.01	12
Total Sample	9	23	8	73	3	23	8	3.94	1.55	147

[a]Hollingshead Scale Values are as follows: (1) Executives, Major Professionals; (2) Business Managers, Lesser Professionals; (3) Administrative Personnel, Small Business Owners; (4) Clerical, Sales Workers; (5) Skilled Workers; (6) Semi-Skilled Workers; (7) Unskilled Workers.

Table 32

Number of Fathers in Each Hollingshead Occupational Status Group, By School SES, by Sex, by Age

(Year Two Master Sample)

	Hollingshead Scale Value[a]									
	1	2	3	4	5	6	7	Mean	SD	N
Lower Income	1	1	3	9	4	7	13	5.29	1.64	38
Males	1	1	1	6	2	3	9	5.26	1.78	23
4 Year Olds	1	1	0	3	1	2	5	5.15	1.96	13
5 Year Olds	0	0	1	3	1	1	4	5.40	1.50	10
Females	0	0	2	3	2	4	4	5.33	.88	15
4 Year Olds	0	0	0	3	0	2	3	5.62	1.34	8
5 Year Olds	0	0	2	0	2	2	1	5.00	1.41	7
Middle Income	43	22	8	5	2	2	0	1.86	1.22	82
Males	23	11	3	2	1	0	0	1.68	.98	40
4 Year Olds	13	6	2	1	1	0	0	1.74	1.08	23
5 Year Olds	10	5	1	1	0	0	0	1.59	.84	17
Females	20	11	5	3	1	2	0	2.05	1.36	42
4 Year Olds	13	6	3	0	1	0	0	1.70	.99	23
5 Year Olds	7	5	2	3	0	2	0	2.47	1.60	19
Total Sample	44	23	11	14	6	9	13	2.95	2.11	120

[a]Hollingshead Scale Values are as follows: (1) Executives, Major Professionals; (2) Business Managers, Lesser Professionals; (3) Administrative Personnel, Small Business Owners; (4) Clerical and Sales Workers; (5) Skilled Workers; (6) Semi-Skilled Workers; (7) Unskilled Workers

Table 33

Number of Subjects Provided For by Various Sources of Income,

By School SES, by Sex, by Age

(Year Two Master Sample)

	Sources of Income				
	Only Mother Works	Only Father Works	Both Parents Work	Unempl. Comp.[a]	S.S. or ADC[b]
Lower Income	70	18	16	23	6
Males	36	10	9	13	5
4 Year Olds	16	6	4	6	3
5 Year Olds	20	4	5	7	2
Females	34	8	7	10	1
4 Year Olds	17	5	3	6	0
5 Year Olds	17	3	4	4	1
Middle Income	18	46	31	8	0
Males	9	20	19	5	0
4 Year Olds	4	9	13	2	0
5 Year Olds	5	11	6	3	0
Females	9	26	12	3	0
4 Year Olds	5	16	5	0	0
5 Year Olds	4	10	7	3	0
Total Sample	88	64	47	31	6

[a]Unemployment Compensation

[b]Supplemental Security Income or Aid to Dependent Children

Table 34

Mean Number of Brothers, Sisters, Children in Family, and Ordinal Position, By School SES, by Sex, by Age

(Year Two Master Sample)

		Number of Brothers		Number of Sisters		Number of Children		Ordinal Position	
	N	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Lower Income	137	.47	.74	.50	.76	1.96	1.05	1.68	1.00
Males	75	.51	.76	.43	.66	1.93	.90	1.68	.90
4 Year Olds	37	.51	.90	.46	.69	1.97	1.01	1.84	.99
5 Year Olds	38	.50	.60	.40	.63	1.89	.79	1.53	.79
Females	62	.44	.72	.60	.86	2.00	1.21	1.68	1.11
4 Year Olds	33	.42	.83	.42	.71	1.82	1.21	1.61	1.22
5 Year Olds	29	.45	.57	.79	1.00	2.21	1.22	1.76	.98
Middle Income	106	.33	.63	.27	.47	1.60	.79	1.41	.71
Males	54	.26	.56	.31	.47	1.57	.74	1.43	.72
4 Year Olds	29	.28	.65	.28	.45	1.55	.83	1.41	.78
5 Year Olds	25	.24	.43	.36	.50	1.61	.66	1.44	.65
Females	52	.40	.69	.23	.47	1.63	.84	1.38	.69
4 Year Olds	28	.32	.61	.18	.39	1.50	.74	1.21	.50
5 Year Olds	24	.50	.82	.29	.51	1.79	.96	1.59	.84
Total Sample	243	.41	.69	.40	.66	1.81	.96	1.56	.89

Table 35

Number of Subjects in Each Sibling Constellation,

By School SES, by Sex, by Age

(Year Two Master Sample)

	Sibling Constellation[a]												
	A	B	C	D	E	F	G	H	I	J	K	N	O
Lower Income	47	20	8	1	17	10	3	10	21	1	2	1	1
Males	24	13	6	0	11	4	1	5	11	0	1	0	0
4 Year Olds	12	7	0	0	6	1	1	2	8	0	0	0	0
5 Year Olds	12	6	6	0	5	3	0	3	3	0	1	0	0
Females	23	7	2	1	6	6	2	5	10	1	1	1	1
4 Year Olds	14	5	2	1	3	4	1	2	3	0	0	0	0
5 Year Olds	9	2	1	0	3	2	1	3	7	1	1	1	1
Middle Income	56	13	4	2	10	7	0	5	9	0	0	0	0
Males	28	3	3	2	7	4	0	4	3	0	0	0	0
4 Year Olds	18	2	0	1	3	3	0	2	0	0	0	0	0
5 Year Olds	10	1	3	1	4	1	0	2	3	0	0	0	0
Females	28	10	1	0	3	3	0	1	6	0	0	0	0
4 Year Olds	17	3	1	0	1	1	0	0	5	0	0	0	0
5 Year Olds	11	7	0	0	2	2	0	1	1	0	0	0	0
Total Sample	103	23	12	3	27	17	3	15	30	1	2	1	1

[a]Sibling Constellations are as follows: (A) Only Child, (B) Older Brother Only, (C) Younger Brother Only, (D) Older and Younger Brother, (E) Older Sister Only, (F) Younger Sister Only, (G) Older and Younger Sister, (H) Older Brother and Sister, (I) Younger Brother and Sister, (J) Older Brother and Younger Sister, (K) Younger Brother and Older Sister, (N) Older and Younger Sister, and Younger Brother, (O) Older and Younger Sister, and Older Brother.

Table 36

Number of Subjects in Each Class By School SES by Sex

(Year Three Master Sample)

School I.D.	Class I.D.	Age Group	No. of Males	No. of Females	Total
Middle Income					
01	69	5	2	2	4
02	70	4	0	1	1
02	71	Y 5	6	4	10
02	72	O 5	7	8	15
	Total		15	15	30
	Mean		3.75	3.75	7.50
Lower Income					
07	73	4	1	0	1
07	74	5	7	3	10
08	75	4	1	0	1
08	76	5	1	5	6
09	77	4-5	4	4	8
10	78	5	1	4	5
12	79	4	2	2	4
12	80	5	4	2	6
	Total		21	20	41
	Mean		2.62	2.50	5.12

Table 36 (Cont.)

Number of Subjects in Each Class By School SES by Sex

(Year Three Master Sample)

School I.D.	Class I.D.	Age Group	No. of Males	No. of Females	Total
Middle Income					
13	81		0	1	1
30	82		1	0	1
31	83		0	1	1
32	84		1	0	1
16	87		0	1	1
37	90		1	0	1
25	92		0	1	1
25	93		0	1	1
26	94		1	0	1
26	95		0	1	1
	Total		4	6	10
	Mean		.40	.60	1
Lower Income					
33	85		1	0	1
34	86		0	1	1
35	88		1	0	1
38	91		1	0	1
36	89		1	0	1
	Total		4	1	5
	Mean		.80	.20	1

Table 37

Mean Fall Peabody Vocabulary Test Scores, Mean Spring Peabody Vocabulary Test Scores, By School SES, by Sex, by Age

(Year Three Master Sample)

	Peabody Vocabulary Test					
	Fall			Spring		
	Mean	SD	N	Mean	SD	N
Lower Income	88.55	15.86	29	92.36	16.54	28
Males						
5 Year Olds	84.21	16.39	14	91.42	16.47	12
Females						
5 Year Olds	92.60	14.74	15	93.06	17.10	16
Middle Income	104.60	21.11	35	108.76	17.60	34
Males						
5 Year Olds	100.00	26.22	17	107.12	17.94	16
Females						
5 Year Olds	108.94	14.25	18	110.22	17.68	18
Total Sample	97.33	20.42	64	101.35	18.88	62

Table 38

Number of Subjects in Each Ethnic Group,

By School SES, by Sex, by Age

(Year Three Master Sample)

	Child Ethnicity				
	White	Black	Hispanic	Oriental	Other
Lower Income	11	26	6	4	1
Males					
5 Year Olds	4	12	6	2	1
Females					
5 Year Olds	7	14	0	2	0
Middle Income	24	14	3	0	0
Males					
5 Year Olds	10	8	1	0	0
Females					
5 Year Olds	14	6	2	0	0
Total Sample	35	40	9	4	1

Table 39

Mean Age and Number of Children from Intact (Both Parents Present) and Non-Intact Families, By School SES, by Sex, by Age (Year Three Master Sample)

	Age (In Months)			Intactness of Family		
	Mean	SD	N	No	Yes	Total
Lower Income	65.95	4.54	44	31	14	45
Males						
5 Year Olds	65.36	5.04	25	17	8	25
Females						
5 Year Olds	66.74	3.77	19	14	6	20
Middle Income	64.66	5.50	41	10	31	41
Males						
5 Year Olds	63.84	5.26	19	4	15	19
Females						
5 Year Olds	65.36	5.73	22	6	16	22
Total Sample	65.33	5.04	85	41	45	86

Table 40

Number of Employed and Nonemployed Mothers and Fathers

By School SES, by Sex, by Age

(Year Three Master Sample)

	Mother's Work Status			Father's Work Status		
	Nonemployed	Employed	Total	Nonemployed	Employed	Total
Lower Income	16	28	44	3	11	14
Males						
5 Year Olds	9	15	24	2	6	8
Females						
5 Year Olds	7	13	20	1	5	6
Middle Income	20	21	41	7	29	36
Males						
5 Year Olds	6	13	19	3	12	15
Females						
5 Year Olds	14	8	22	4	17	21
Total Sample	36	49	85	10	40	50

Table 41

Number of Mothers in Each Hollingshead Occupational Status Group, By School SES, by Sex, by Age

(Year Three Master Sample)

	Hollingshead Scale Value[a]									
	1	2	3	4	5	6	7	Mean	SD	N
Lower Income	0	1	1	16	2	5	3	4.64	1.22	28
Males										
5 Year Olds	0	1	0	5	1	4	3	5.14	1.46	14
Females										
5 Year Olds	0	0	1	11	1	1	0	4.14	.65	14
Middle Income	2	5	3	9	0	1	0	3.15	1.23	20
Males										
5 Year Olds	1	5	1	5	0	1	0	3.08	1.31	13
Females										
5 Year Olds	1	0	2	4	0	0	0	3.29	1.01	7
Total Sample	2	6	4	25	2	6	3	4.02	2.46	48

[a]Hollingshead Scale Values are as follows: (1) Executives, Major Professionals; (2) Business Managers, Lesser Professionals; (3) Administrative Personnel, Small Business Owners; (4) Clerical, Sales Workers; (5) Skilled Workers; (6) Semi-Skilled Workers; (7) Unskilled Workers.

Table 42

Number of Fathers in Each Hollingshead Occupational Status Group, By School SES, by Sex, by Age (Year Three Master Sample)

	Hollingshead Scale Value[a]									
	1	2	3	4	5	6	7	Mean	SD	N
Lower Income	0	1	0	2	0	4	4	5.64	1.54	11
Males										
5 Year Olds	0	1	0	1	0	2	2	5.33	1.80	6
Females										
5 Year Olds	0	0	0	1	0	2	2	6.00	1.09	5
Middle Income	11	9	5	1	1	0	0	1.96	1.04	27
Males										
5 Year Olds	5	3	2	1	1	0	0	2.17	1.27	12
Females										
5 Year Olds	6	6	3	0	0	0	0	1.80	.75	15
Total Sample	11	10	5	3	1	4	4	3.03	2.05	38

[a]Hollingshead Scale Values are as follows: (1) Executives, Major Professionals; (2) Business Managers, Lesser Professionals; (3) Administrative Personnel, Small Business Owners; (4) Clerical, Sales Workers; (5) Skilled Workers; (6) Semi-Skilled Workers; (7) Unskilled Workers.

Table 43

Number of Subjects Provided For by Various Sources of Income,

By School SES, by Sex, by Age

(Year Three Master Sample)

	Sources of Income				
	Only Mother Works	Only Father Works	Both Parents Work	Unempl. Comp.[a]	S.S. or ADC[b]
Lower Income	23	7	4	6	3
Males					
5 Year Olds	12	3	3	4	2
Females					
5 Year Olds	11	4	1	2	1
Middle Income	7	16	13	3	0
Males					
5 Year Olds	4	3	9	2	0
Females					
5 Year Olds	3	13	4	1	0
Total Sample	30	23	17	9	3

[a]Unemployment Compensation

[b]Supplemental Security Income or Aid to Dependent Children

Table 44

Mean Number of Brothers, Sisters, Children in Family, and Ordinal Position, By School SES, by Sex, by Age

(Year Three Master Sample)

		Number of Brothers		Number of Sisters		Number of Children		Ordinal Position	
	N	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Lower Income	44	.48	.85	.59	.79	2.07	1.21	1.89	1.18
Males									
5 Year Olds	24	.46	.72	.46	.72	1.92	.97	1.79	.93
Females									
5 Year Olds	20	.50	1.00	.75	.85	2.25	1.45	2.00	1.45
Middle Income	41	.44	.74	.17	.38	1.61	.94	1.34	.73
Males									
5 Year Olds	19	.37	.76	.16	.37	1.53	.96	1.47	.90
Females									
5 Year Olds	22	.50	.74	.18	.39	1.68	.94	1.23	.53
Total Sample	85	.46	.80	.39	.66	1.85	1.11	1.62	1.02

Table 45

Number of Subjects in Each Sibling Constellation,

By School SES, by Sex, by Age

(Year Three Master Sample)

	Sibling Constellation[a]							
	A	B	D	E	F	G	H	I
Lower Income	14	6	0	6	2	2	5	13
Males								
5 Year Olds	8	3	0	4	0	0	2	7
Females								
5 Year Olds	6	3	0	2	2	2	3	6
Middle Income	26	5	1	1	0	0	2	6
Males								
5 Year Olds	14	1	1	1	0	0	2	0
Females								
5 Year Olds	12	4	0	0	0	0	0	6
Total Sample	40	11	1	7	2	2	7	19

[a]Sibling Constellations are as follows: (A) Only Child, (B) Older Brother Only, (D) Older and Younger Brother, (E) Older Sister Only, (F) Younger Sister Only, (G) Older and Younger Sister, (H) Older Brother and Sister, (I) Younger Brother and Sister.

Teacher Characteristics

All classes had one head teacher, and usually one or two regular assistant teachers. Various other adults were irregularly present during the observations, e.g., children's parents, the director of the school, teachers from other rooms, student assistants, or other school personnel. The sex and ethnicity of the head and regular assistant teachers are shown in Tables 46, 47 and 48 for each of the three years. We have chosen to present this material by class, since its major use will be in class level analyses.

Table 46

Sex and Ethnicity of Head and Assistant Teachers in Each Class, By School Income Level, and Age: Year One

School Middle	Class I.D. Income	Age Group	Males White	Males Black	Males P.R.	Males No.	Females White	Females Black	Females P.R.	Females No.	Total
01	01	3's	0	0	0	0	2	0	0	2	2
	02	4's	0	0	0	0	2	0	0	2	2
	03	5's	0	0	0	0	2	0	0	2	2
		Total	0	0	0	0	6	0	0	6	6
02	04	3's	0	0	0	0	3	0	0	3	3
	05	3's	0	0	0	0	3	0	0	3	3
	06	3's	0	0	0	0	2	1	0	3	3
	07	4's	1	0	0	1	0	0	2	2	3
	08	4's	0	0	0	0	2	1	0	3	3
	09	5's	0	0	0	0	3	0	0	3	3
	10	5's	0	0	0	0	2	0	0	2	2
		Total	1	0	0	1	15	2	2	19	20
03	11	3's	0	0	0	0	2	0	0	2	2
	12	4's	0	0	0	0	2	0	0	2	2
		Total	0	0	0	0	4	0	0	4	4
Lower Income											
07	16	3's	0	0	0	0	2	0	0	2	2
	17	4's	0	0	0	0	2	0	0	2	2
		Total	0	0	0	0	4	0	0	4	4

Table 46 (Cont.)

Sex and Ethnicity of Head and Assistant Teachers in Each Class, By School Income Level, and Age: Year One

School	Class I.D.	Age Group	Males				Females				Total
			White	Black	P.R.	No.	White	Black	P.R.	No.	
08	18	3's	0	0	0	0	1	1	0	2	2
09	19	3's	0	0	0	0	1	1	0	2	2
	20	4's	0	0	0	0	1	1	0	2	2
		Total	0	0	0	0	2	2	0	4	4
10	21	3's	1	0	0	1	0	1	0	1	2
	22	4's	0	0	0	0	0	2	0	2	2
	23	5's	0	0	0	0	0	1	0*(1)	2	2
		Total	1	0	0	1	0	4	0*(1)	5	6
11	24	5's	0	0	0	0	3	0	0	3	0
12	25	3's	0	0	0	0	1	1	0	2	2
	26	4's	0	0	0	0	2	0	0	2	2
	27	5's	1	0	0	1	1	0	0	1	2
		Total	1	0	0	1	4	1	0	5	6

*(1) Refers to 1 Phillipino teacher

Table 47

Sex and Ethnicity of Head and Assistant Teachers in Each Class, By School Income Level, and Age: Year Two

School	Class I.D.	Age Group	Males				Females			
			White	Black	P.R.	No.	White	Black	P.R.	No.
Middle Income										
01	28	4's	0	0	0	0	2	0	0	2
	29	5's	0	0	0	0	2	0	0	2
02	31	4's	0	0	0	0	2	1	0	3
	32	4's	0	0	0	0	2	1	0	3
	33	4's	1	0	0	1	0	0	2	3
	30	5's	0	0	0	0	3	0	0	3
03	34	4's	0	0	0	0	2	0	0	2
	35	4's	0	0	0	0	2	0	0	2
13	49	4's	0	0	0	0	2	0	0	2
	50	5's	0	0	0	0	2	0	0	2
14	41	4's	0	0	0	0	2	0	0	2
15	52	5's	0	0	0	0	2	0	0	2
16	53	5's	0	0	0	0	1	0	0	1
17	54	4's	0	0	0	0	1	0	0	1
18	55	5's	0	0	0	0	2	0	0	2
19	56	4's	0	0	0	0	1	1	0	2
20	57	5's	0	0	0	0	1	0	0	1

Table 47 (Cont.)

Sex and Ethnicity of Head and Assistant Teachers in Each Class, By School Income Level, and Age: Year Two

School	Class I.D.	Age Group	Males				Females			
			White	Black	P.R.	No.	White	Black	P.R.	No.
21	58	5's	0	0	0	0	1	0	0	1
22	59	5's	0	0	0	0	1	0	0	1
23	60	5's	0	0	0	0	1	0	0	1
	61	5's	0	0	0	0	1	0	0	1
24	62	5's	0	0	0	0	1	0	0	1
25	63	4's	0	0	0	0	2	0	0	2
26	64	4's	0	0	0	0	2	0	0	2
28	66	4's	0	0	0	0	2	0	0	2
	67	4's	0	0	0	0	2	0	0	2
Lower Income										
07	36	4's	0	0	0	0	0	2	0	2
	37	4's	0	0	0	0	1	1	0	2
	38	5's	0	0	0	0	2	0	0	2
08	39	4's	0	0	0	0	2	1	0	3
	40	4's	0	0	0	0	1	2	0	3
09	41	4's	0	0	0	0	1	1	0	2
	42	4's	1	0	0	1	0	1	0	1
	43	5's	1	0	0	0	0	1	0	1

Table 47 (Cont.)

Sex and Ethnicity of Head and Assistant Teachers in Each Class, By School Income Level, and Age: Year Two

School	Class I.D.	Age Group	Males White	Black	P.R.	No.	Females White	Black	P.R.	No.
10	44	4's	0	0	0	0	0	3	0	3
	45	5's	1	0	0	1	0	1	0	1
12	46	4's	0(1)	0	0	(1)	1(1)	0	0	2
	47	5's	0	0	0	0	1(1)	0	0	2
27	65	5's	0	0	0	0	2	0	0	2

Note. (1) Under male in class 46 refers to a Persian; under female in the same class, and in class 47, the teachers were Chinese.

Table 48

Sex and Ethnicity of Head and Assistant Teachers in Each Class, By School Income Level, and Age: Year Three

School	Class I.D.	Age Group	Males White	Males Black	Males P.R.	Males No.	Females White	Females Black	Females P.R.	Females No.	Total
Middle Income											
01	69	5's	0	0	0	0	2	0	0	2	2
02	70	5's	1	0	0	1	0	1	1	2	3
02	71	5's	0	0	0	0	1	2	0	3	3
02	72	5's	0	0	0	0	2 *(1)	0	0	3	3
13	81	5's	0	0	0	0	2	0	0	2	2
30	82	5's	0	0	0	0	2	0	0	2	2
32	84	5's	0	0	0	0	1	1	0	2	2
16	87	5's	0	0	0	0	2	0	0	2	2
37	90	5's	0	0	0	0	2	0	0	2	2
25	92	5's	0	0	0	0	2	0	0	2	2
25	93	5's	0	0	0	0	2	0	0	2	2
26	94	5's	0	0	0	0	2	0	0	2	2
26	95	5's	0	0	0	0	2	0	0	2	2
Lower Income											
07	73	5's	0	0	0	0	1	1	1	3	3
07	74	5's	0	0	1	1	0	2	0	2	3
08	75	5's	0	0	0	0	1	0	1	2	2
08	76	5's	0	0	0	0	1	0	2	3	3
09	77	5's	0	0	0	0	1	1	0	2	2
10	78	5's	1	0	0	1	0	1	0	1	2
10	79	5's	0	0	0	0	2 *(1)	0	0	3	3
10	80	5's	0	0	0	0	2 *(1)	0	0	3	3

Table 48 (Cont.)

Sex and Ethnicity of Head and Assistant Teachers in Each Class, By School Income Level, and Age: Year Three

School	Class I.D.	Age Group	Males White	Males Black	Males P.R.	Males No.	Females White	Females Black	Females P.R.	Females No.	Total
Lower Income											
33	85	5's	0	1	0	1	1	0	1	3	3
34	86	5's	0	0	0	0	3	0	0	3	3
35	88	5's	0	0	0	0	1	0	0	1	1
36	89	5's	0	0	0	0	2	0	0	2	2
38	91	5's	0	0	0	0	1	0	0	1	1

Note. *(1) Refers to 1 Oriental teacher in each class

Chapter V

TESTS

This section fully describes each instrument, the training of testers, and the procedures for test administration.

In order to study various aspects of sex-role differentiation, we selected two tests of sex-role identification, two of sex-role preference, and one of sex-typing. Authors' descriptions were used as the criteria of what the test measured.

In addition to obtaining information about different aspects of sex-role differentiation, we used a number of tests because we wanted to see which tests would be most suitable for young preschool children, and to investigate the construct validity of these tests (Dunivant, 1979). We selected tests to meet certain practical requirements. The tests were verbal-objective, did not require a great deal of time to administer, and were relatively easy to administer and to score.

The tests of sex-role identification were the Draw-A-Person Test (DAP) and the DeLucia Toy Preference Test (TPT). The tests of preference were the It Scale for Children, Biller modification (BIT), and the Occupational Preference Test (OPT). The Wadleman Recall Test (WRT) measured sex-typing. In addition to the five sex-role tests, the Peabody Picture Vocabulary Test (PPVT), (PVT), forms A and B, was used to obtain a quick estimate of intelligence in order to study the relationship of IQ to sex-role differentiation.

Following is a description of each sex-role test used. First we describe how the tests have been used and what results have been obtained in several previous investigations. Then, the administration and scoring procedures used in the present study are described for each test.

TEST DESCRIPTIONS

Draw-A-Person Test (DAP)

The DAP has been used to study sex-role differentiation in a number of ways. One approach follows from Machover's (1949) assumption that sex of first figure drawn, and relative size of male and female figures were indicators of sexual identification. Bieliauskas (1960), for example, found that the tendency to draw one's own sex when asked to draw a person increased with age from 5 to 15 years. He assumed that sex of figure drawn could be used as a measure of sexual identification. However, Brown and Tolor (1959) and Swensen (1957) reviewed studies which used both first sex drawn and relative size of figures as indices of sexual identification, and these studies present conflicting results for both adults and children.

A second approach to the use of the DAP is to examine the degree of sexual differentiation between the male and female figures. Swensen (1955) developed a scale of sexual differentiation for use in assessing pairs of drawings. Swensen and Newton (1955) used Swensen's scale in a study of children in grades 1 through 8. They found that the scores of both boys and girls improved greatly from age 6 to 8, but that girls were significantly better able to differentiate than boys through seventh grade. Eighth-grade boys and girls did not differ in

their ability to differentiate. Haworth (Haworth & Normington, 1961) developed a modification of the Swensen (1955) scale of sexual differentiation for use with children. Haworth and Normington collected pairs of drawings from 312 children, ages 7 through 12. They found that after the age of 8, girls consistently showed a stronger emphasis on same-sex figures, and decreasing use of either equal or opposite sex emphasis. Boys, however, fluctuated from age to age. At ages 9, 11, and 12, approximately 50 percent of boys included more sex-typed items on the female figure.

Haworth and Normington (1961) reported that sex of the most differentiated figure seemed more meaningful to consider than either sex of first figure drawn, or relative size of figures. They stated that drawing the same sex first may be an index of sex-role preference, and that the Sexual Differentiation Scale is a developmental index of psycho-sexual maturity. Haworth and Normington (1961) concluded, however, that further study was needed to find if the ability to differentiate between male and female figures could be considered a measure of sex-role identification.

Biller (1968) developed a scoring system for the DAP which took into account both first sex drawn and the degree of differentiation between the sexes. He used the DAP to measure sex-role orientation, which he defined as, "one's view of one's self," in a study of masculine development in kindergarten boys.

In Biller's (1968) study, children were asked to draw a person, and then to tell whom the person represented, in order to determine the sex of the figure. The child was then asked to draw the sex opposite to the first figure. Differentiation of sex in the drawings was scored as present or absent. Biller stated that since pilot work had indicated that sex of first figure drawn was a more important indication of sex-role orientation than was differentiation of sex, more weight was given to sex of first person drawn in his scoring system. The four levels were: drawing a male first and differentiating (6 points); drawing a male first but not differentiating (4 points); drawing a female first but not differentiating (2 points); and drawing a female first and differentiating (1 point). The percentage of subjects at each level of scoring were: male first and differentiation, 48 percent; male first, no differentiation, 23 percent; female first and no differentiation, 13 percent; and female first and differentiation, 16 percent.

Brophy & Laosa (1973) used Biller's modification of the DAP as a measure of sex-role identification in their study of sex-role development in male-taught vs. female-taught kindergarteners. There were no differences in the performances of the two groups on the DAP. 76% of the male-taught boys, and 68% of the female-taught boys drew a same-sex figure first. 80% of the male-taught girls and 70% of the female-taught girls drew a same-sex figure first. The mean combination score (which could range from 1 = low, to 6 = high same-sex identification), for male-taught boys was 4.55, for female-taught boys, 4.21. The mean combination score for male-taught girls was 5.05, for female-taught girls, 4.52.

Use of the DAP in the present study. The administration and scoring were based on the procedures used by Biller (1968)and Brophy and Laosa (1973).

Material. One sheet of plain, white, 8½ x 11" paper, and a small pencil to be used by the subjects.

Description. The subject was asked to draw a person. When the sex of the figure was determined, the child was asked to draw a person of the sex opposite to the first figure. The test is considered a measure of sex-role identification (Brophy & Laosa, 1973).

Administration. Give the child a blank 8½" x 11" sheet of paper and a pencil, and ask him/her to "draw a person." (If S draws only a face, ask him/her to "draw a whole person").

When child finishes, praise and say, "Tell me something about the person." If a prompt is necessary, "What is the person's name." (to determine sex of figure).

Label the drawing (1), turn the paper over, and ask child to draw a person of the opposite sex. Use the same terminology that the child has used. For example, "Now I want you to draw a girl/boy; or, lady/man." (Before going on to the next test, write child's name on pg. (1) of the drawings.)

Scoring. We originally intended to score the DAP according to Biller's (1968) system, which takes into account both the sex of the first figure drawn, and the degree of differentiation between the two figures. However, to control for the cognitive component in the score, that is, the ability to differentiate between the sexes, we collapsed the scoring system into two scores. A subject earned two points if he or she drew a male first, and one point if a female was drawn first.

Occupation Preference Test (OPT)

Determining children's occupational preferences has been used for several purposes in studies of sex-role differentiation. The administration and scoring vary according to how the test is being used.

Brophy and Laosa (1973) used the OPT as a measure of sex-role preference in a comparison of sex-role development in male-taught and female-taught kindergarten children. They asked children what they wanted to be when they grew up, and obtained three responses. Two judges rated each occupational choice on a 5-point scale. An occupation was rated "1" if it was considered clearly masculine, "2" if it was more associated with males than females, "3" if it was not associated with either sex particularly, "4" if it was more associated with females, and "5" for an occupation exclusively associated with females. The ratings of the two judges were added for each of the three choices. Total scores could range from 6 (masculine) to 30 (feminine). The mean score for the male-taught boys was 28.41; for the female-taught boys, 28.05. The mean for the male-taught girls was 12.75; for female-taught girls, 11.04. (sic: Brophy & Laosa actually reversed their scoring in reporting their results so that 6 was feminine and 30, masculine.) There were no significant differences in the performances of the male-taught versus the female-taught children. However, in both classes, boys were more sex-typed than girls.

Looft (1971a and b) studied vocational aspirations in elementary-school children. He asked children what they would like to be and what they thought they really would be. He found that boys and girls tended to give highly sex-stereotyped responses to both questions. Girls answered both questions by giving traditionally feminine roles (nurse, mother/housewife), while boys gave a wider range of active occupations. Boys were also more likely than girls to change their initial responses when asked about their vocational expectations.

Papalia and Tennent (1975) used Looft's (1971a) format to study vocational preferences and expectations in preschool children, ages 3-8 to 5-8. They found that boys and girls gave sex-typed responses, both when asked what they would like to be, and what they thought they really would be. When asked for vocational preferences, boys used 14 categories, and their most frequent responses were fireman (23.8%) and policeman (14.2%). Girls used 11 vocational categories, and their most frequent responses were relative (mother/sister, 34.4%), and nurse (20.6%). When asked for vocational expectations, girls tended to change their responses in a more domestic direction (e.g., from ballerina to mother), and boys often changed to active, nondomestic occupations (e.g., from husband to fireman).

Use of the OPT in the present study. In the present study, the administration and scoring of the OPT was based on the methods used by Brophy & Laosa (1973).

Material. None. Tester recorded child's responses.

Description. The subjects were asked what they wanted to be when they grew up, and were asked for 3 choices. This is considered a test of sex-role preference (Brophy & Laosa, 1973).

Administration. The tester said to the subject: " (name) , what would you like to be when you grow up?" Whatever the subject said was recorded. If the child said husband/father, or wife/mother, the tester recorded it, and said, "Okay, but if you went to work, what kind of job would you like to have?" or, "What kind of work would you like to do when you grow up?"

The testers attempted to elicit three occupational choices. If it was necessary, they said "What else would you like to be when you grow up," or "What other kind of job would you like to have?"

Scoring. We reversed Brophy & Laosa's (1973) scale, so that a 1 was for a traditionally feminine occupation, and a 5 for a masculine one. This was done so that all our tests would be scored in the masculine direction.

Occupations were rated by two judges. Differences were resolved by discussion, and the consensus rating was used. Judges initially agreed on 80% of the ratings with 99% within one scale point. The test was considered valid if the subject gave at least one occupational choice. The total score was the average of the ratings given to each choice. Total scores could range from 1 (feminine extreme) to 5 (masculine extreme).

The Toy Preference Test (TPT)

The study of children's toy or activity preferences as a measure of sex-role differentiation has been approached in a variety of ways. The subjects may be asked to pick from among actual toys (e.g., Rabban, 1950); to show their favorite toys from among their own collection (e.g., Fauls and Smith, 1956); or to make choices from pictures of toys and activities (e.g., Brown, 1956). Children may either be asked to make choices for themselves (Brophy and Laosa, 1973), or for a pictured child (Brown, 1956).

DeLucia (1963) developed the Toy Preference Test in an attempt to construct a reliable objective test of sex-role differentiation. She first collected 48 pictures of toys which would be familiar to young children. Then, to determine

the sex-appropriateness of each toy, she had college students rate each toy on a nine-point scale of masculinity-femininity. A rating of one was for a toy thought to be strongly masculine, as "appropriate for boys almost exclusively." A rating of nine was for a toy thought to be "appropriate for girls almost exclusively." Toys considered equally appropriate for both sexes were to be rated five.

On the basis of the adults' ratings, the toys were ranked by mean rating. Two equivalent sets of 24 toys each were developed (Picture Sets A and B). Within each set of 24, toys were paired with one another so that each toy was a member of two pairs. There were three types of pairs: four pairs consisted of one masculine and one feminine toy; 10 pairs were made up of two items which were masculine, and 10 pairs consisted of two feminine toys.

DeLucia (1963) presented black and white photographs to the subjects, one pair at a time, along with a drawing of a boy (for male subjects), or a girl (for female subjects). The child was asked which of the two toys the child in the drawing would like to play with. The subject received one point for each sex-appropriate response, and no point for each sex-inappropriate response. The appropriate response for a boy was the toy with the more masculine rating, and for a girl, the appropriate choice was the more feminine toy. Total scores could range from zero to 24.

DeLucia (1963) used her test to study sex-role identification in kindergarten through fourth-grade children. She found an orderly increase in degree of same-sex choices from kindergarten through the third grade, but a nonsignificant inversion in the scores for fourth-grade boys and girls. DeLucia also found that boys consistently made more same-sex choices than girls did, although this sex difference was small in kindergarten and first grade. The mean scores (on Picture Set A) achieved at each grade level were as follows: kindergarten boys, 15.3, girls, 14.8; first grade boys 16.2, girls, 16.1; second grade boys, 19.1, girls, 17.2; third grade boys, 21.1, girls, 17.6; and fourth grade boys, 19.2, girls, 16.3. DeLucia (1963) reported that the test-retest reliability of her measure was between .67 and .72 (rho) when the test was administered by a female to boys, or by a male to girls. The reliability was only .13 to .37 when the test was administered by an examiner who was the same sex as the subject.

Use of the TPT in the present study. We used a modification of DeLucia's (1963) Toy Preference Test, Picture Set A. Since DeLucia had the toys rated over 10 years before the present study was carried out, we had the items re-rated by a current group of college students. We wanted to see if judgments of adults about the appropriateness of the toys for one sex or the other would be consistent with the earlier ratings. We presented a list of the items to 54 students in undergraduate psychology classes, and asked them to rate the toys, using DeLucia's nine-point masculinity-femininity scale. We found no differences between the mean ratings we obtained and those reported by DeLucia (1963).

Material. The test consisted of 24 color photographs of the toys DeLucia (1963) used; and two line drawings, one of a little girl, one of a boy. The tester also used an answer sheet, which listed the 24 pairs, and the masculinity-femininity rating of each toy, for ease of scoring.

Description. Subjects were asked to make choices for a pictured same-sex child from 24 pairs of toys. DeLucia (1963) considered her test a measure of sex-role identification.

Administration. Place the same-sex picture in front of the subject. Say, "Now, (name of child), here is a picture of a little girl/boy. I am going to show you some pictures of toys. I want you to tell me which toy the little girl/boy would like to play with."

For each pair, say, "Now, which toy would the little girl/boy like to play with?" (Child may name or just point. If you're unsure of a verbal response, ask child to show you his/her choice.)

Scoring. In DeLucia's (1963) scoring system, a child received one point for making the relatively more sex-appropriate choice, or zero for each inappropriate choice. In the present study, all tests were scored in the masculine direction. Thus, on the TPT, the relatively more masculine choices received one point, the more feminine item was scored zero. Total scores could range from zero to 24.

Nadleman's Recall Test (NRT)

Nadleman (1973) used the recall test as one of several tests of sex-typing in a cross-cultural study of sex identity in middle- and working-class children. The recall test consisted of 10 cards with drawings of masculine items (e.g., boxing, fighting fires) and 10 cards depicting feminine activities (e.g., dressing a dolly, wearing perfume). The cards were presented in one of five predetermined random orders, on a table in front of the child. The items were presented for a very brief time (about three seconds) and "named" aloud twice by the tester. After all the cards had been seen, the child was immediately asked to name as many as he or she could. The subject received two scores, the total number of masculine items remembered, and the total number of feminine items remembered.

Nadleman (1973) administered the test to a group of American kindergarten children, and to a third-grade group. Half of the children were boys, half were girls. Half of the group were working class, half professional, middle class, as determined by father's occupation, education, and place of residence. Nadleman found that children in both age groups recalled more same-sex than opposite-sex items; that there was a non-significant tendency for the differential recall effect to be stronger in boys, and that there was no difference in the recall effect between the working- and middle-class children.

Use of the NRT in the present study. A shortened version of Nadleman's (1973) Recall Test was used. In order to make the test easier for our young subjects, 16, instead of 20 pictures were presented.

Material. The test consisted of 16 line drawings on white cards, 8 of masculine, and 8 of feminine activities. The drawings were obtained from Nadleman. The tester also used an answer sheet, which listed the label given to each item by Nadleman, e.g., "dressing a dolly" for the picture of a doll. Below the list was a column of numbers from 1 to 16, with space for the tester to write the child's responses.

Description. After seeing, and being told the name of 16 pictures of activities, one-at-a-time, children were asked to recall as many pictures as they could.

Administration. Say, "Now (name) , I'm going to show you some pictures."

Present the 16 cards to the child, one at a time, in "random" order. (Shuffle the pictures before presenting them to each subject.) Show each card for three seconds. Use the NRT answer sheet for the appropriate labels, and name each picture twice. Then show the next card, and so on for each of the 16 pictures.

Immediately after showing the last card, say to the child: "Name as many pictures as you can." (If child doesn't answer, prompt by saying, "Tell me what pictures you saw.") If a child doesn't respond after 10 seconds, ask if they can remember any of the pictures, or if they have already named some, ask if they remember any more. If they don't, say, "that's all right, let's put these pictures away and look at something else."

Scoring. Since we did not want the test score to just reflect the child's memory ability, the Nadelman was scored in terms of the relative dominance of masculine over feminine items recalled. The formula used for scoring was:

$$\frac{\#\text{ of masculine items recalled} - \#\text{ of feminine items recalled}}{\#\text{ of masculine items recalled} + \#\text{ of feminine items recalled}}$$

Scores could range from -1 (dominance of feminine over masculine items remembered) to +1 (dominance of masculine over feminine items remembered.)

The It Scale for Children (ITSC) (BIT)

Brown (1956) developed the ITSC to measure children's sex-role preferences, which he operationally defined in terms of subjects' choices from sex-typed objects and activities. The scale consists of 36 picture cards depicting objects, people, and activities associated with masculine or feminine roles; and a figure drawing of a child of unspecific sex, referred to as 'It.' The subject makes choices from among the pictures for 'It.' Brown's (1956) assumption was that children project their own preferences onto the It-figure.

There are three sections of the test. In the Toy Pictures Section, one point is given for each masculine choice, zero for each feminine choice. In the Eight Paired Pictures, eight points are given for each male preference, zero for each female preference; and in the Four Child Figures, preference for the boy is given 12 points; for the girlish boy, 8 points; for the boyish girls 4 points; and for the girl, zero. The total scores on the ITSC could range from zero (exclusively feminine) to 84 (exclusively masculine).

Brown (1956) first reported the use of the ITSC with a group of five- and six-year-old children. He found a test-retest (one month interval) correlation coefficient of .69 for the boys, and .82 for girls. The mean score of the boys was 66.36; of the girls, 38.40. Brown (1956) stated that the significant difference between the boys and girls suggested a definite, and relatively dichotomous sex role pattern. The other major findings were: a number of children showed a mixed preference pattern, a tendency which was twice as frequent in girls as in boys; some children, more frequently girls than boys, showed an opposite-sex preference; and boys showed a significantly greater preference for the masculine role than girls did for the feminine role.

The ITSC has been widely used in studies of sex-role differentiation. Since our purpose is to indicate the ways in which the test has been used

with preschoolers, we will limit our discussion to a sample of such studies. Brown (1956) and Hartup and Zook (1960) investigated the effects of age and socioeconomic status on sex-role differentiation in three- and four-year olds. They found that sex-typed performance increased on the ITSC from ages three to four. Brown (1956) subdivided his middle class group of kindergarten children on the basis of father's occupational status into upper-middle and lower-middle classes. No differences were found in their performance on the ITSC. Hartup and Zook (1960) found no differences in degree of sex-typing on the ITSC between lower- and middle-class children. Subjects were considered lower-class if they attended public daycare, middle-class if they were enrolled in a private nursery school.

Modified versions of the ITSC have also been used frequently. A major reason for the modifications has been the criticism that the 'It' figure is seen as more masculine than feminine by children (Brown, 1962). Hartup and Zook (1960) presented the ITSC under two sets of instructions. They had three- and four-year-old girls make choices when the 'It' figure was called 'It', and 'little girl'; boys made choices for 'It' and 'little boy.' They found that girls made more feminine choices under the 'little girl' than under the 'It' instructions. Differences in instructions were not significant for boys. Schell and Silber (1968) extended Hartup and Zook's (1960) work. They presented the ITSC under three instructional conditions to all subjects three- and four-year-olds, with the figure labeled 'It,' 'little girl', and 'little boy.' Schell and Silber (1968) reported that both boys and girls have learned to make sex-typed discriminations by age three; and that four year olds were better than three year olds at making such discriminations. They also found that under the 'little girl' instructions, the girls had more feminine scores than boys; however, under the 'little boy' instructions, both boys and girls had equally masculine scores, indicating that girls are as good at making sex-typed discriminations for boys as boys are.

Biller (1968) presented only the face of the 'It' figure, since pilot work indicated that the face was sexually neutral in appearance. The face was referred to as 'a child.' Biller (1968) used this modified version of the ITSC to measure sex-role orientation, or one's feeling about oneself. He found that kindergarten boys showed a significantly masculine sex-role orientation.

Fling and Manosevitz (1972) administered the ITSC under two sets of instructions in order to measure sex-role orientation and sex-role preference in four-year-olds. To measure sex-role orientation, the ITSC was administered substituting a blank card for the 'It' figure. Subjects were instructed to pretend there was a picture of a child named 'It' on the card, and to make choices for the child. The subjects were also asked to make choices for themselves, in order to measure sex-role preference. On both versions of the ITSC, boys and girls differed in direction, but not degree of sex-typing. Fling and Manosevitz (1972) stated that the finding that boys were not significantly more sex-typed than girls indicated a masculine bias in the standard 'It' figure. They also found that boys' and girls' Preference scores were more sex-typed than Orientation scores, although the two scores were positively correlated.

Use of the BIT in the present study. The administration was based on Biller's (1968) modification of Brown's (1956) material and instructions. Brown's (1956) scoring system was used.

Material. The standard 36 picture cards from the ITSC (Brown, 1956) were used. Instead of the 'It' figure, a line drawing of a face was used (Biller's (1968) modification) and referred to as 'the child.' The tester also used a scoring sheet for recording each subject's responses.

Description. Subjects were asked to make choices for 'the child' from pictures of masculine and feminine objects, activities, and persons. The test is considered a measure of sex-role preference (Brown, 1956). Although Biller (1968) considered his modification of the ITSC a measure of sex-role orientation, in the present study we used the modified ITSC to measure sex-role preference.

Administration. Put picture of face in front of subject. Say, "Here is a picture of a child. This is a child playing a make-believe game -- a game where it can be anybody in the whole world -- a game where this child can make-believe or do anything." (If S asks about sex of the child, say, "It's just a child. Let's just say it's a child.")

(1) Toy Pictures: "Look, here are some pictures of toys. Now, let's pretend like the child could play with all of these toys. Which toy would the child like the best. Show me the toy the child would like the best ...Now show me another toy the child likes." (Repeat until 4 choices are made).

Toy Set 2 - "Here are some more toys, show me, etc." (repeating above instructions until 4 choices are made).

"Now we have some other pictures to show the child."

(2) Eight-paired pictures.

(a) Indians
"Here are some big Indians. Which big Indian is the child going to be?"

(b) Clothes
"Here are some big person's clothes. Which big person's clothes is the child going to wear?"

(c) Sewing-airplane
"Here are some things big people do. Here are some things to make an airplane and things to use in making a handkerchief, a hankie. Show me which one the child would rather make."

(d) Face articles
"Here are pictures of things to use on our face. Now, let's pretend like the child could play 'grown-ups' and had all these things to play 'grown-ups' with. Show me which one the child would rather play 'grown-ups' with."

(e) Mechanical tools and ousehold objects
"Here are pictures of some objects to use in washing and ironing and some objects to use in fixing things that are broken. Which is this child going to do?"

(f) Shoes
"Here are some big people's shoes. Which big person's shoes is the child going to put on?"

(g) Children playing
"Here are pictures of children playing together. Let's pretend like the child could be in one of these pictures, too. Which picture would it rather be in?"

(h) Building tools and baking articles
"Here are some things big people do. Here are some things to bake and cook with and some things to build with. Which is this child going to do?"

(3) Four child-figures. "Here are some pictures of children. Let's pretend like this child (indicate) can be anyone of these it wanted to be. Which child would it rather be?"

Scoring.

Toy pictures: 1 point for each masculine choice, zero for each feminine choice. Total scores for this section could range from 0 to 8.

Eight paired pictures: 8 points for each masculine choice, zero for each feminine one. Scores could range from 0 to 64.

Four child-figures: Preference for the boy was scored 12, for the girlish boy 8, for the boyish girl 4, and for the girl, zero.

The total score of the BIT could range from zero, an exclusively feminine score, to 84, an exclusively masculine score.

TEST ADMINISTRATION

Testers

The majority of the testers were graduate students who were recruited through student employment offices. The remaining number included college students, college graduates and people with college masters degrees in education. All testers were chosen for their previous experience and skill in working with children.

In each year of the study, in the Fall, the testers were given a three-hour group training session on the administration and scoring of the test battery. In the training session, the testers were first given a general orientation about the specific tests to be used. Dr. Suter explained the administration and scoring of each test, and the testers practiced during the session by following detailed written instructions. Questions were answered as they arose.

After the testers went through the tests on their own, there was another discussion about administration and scoring, and about the general procedures that were to be followed in the study. Finally, testers were given their individual assignments. They each were given class lists with the first name and birth date of children they were to test. Each tester was observed on at least the first day of testing and then reported his or her progress to Dr. Suter, who was available to discuss problems and questions on an on-going basis. Testers were required to return completed tests on a weekly basis. The scoring on each of the tester's first few tests was checked by Dr. Suter, so that if mistakes were made they could be avoided on further tests. After the initial period of testing, scoring was spot-checked by research assistants. Scoring on one of the tests, the Draw-A-Person, was not completely objective, since the tester had to determine if the male and female figures drawn were differentiated. Therefore,

25% of the Draw-A-Person tests scored by each tester were also scored by a research assistant. Interrater reliability varied from .88 to .95.

In the Fall of the first year, there were 16 testers, 8 male, 8 female. In the Spring, there were 12 testers, 5 male, 7 female. Five of the Fall testers also tested in the Spring.

In the second year, there were 11 testers in the Fall, 6 male, 5 female. In the Spring, there were 9 testers, 5 male, 4 female. Three of the Fall testers also tested in the Spring. Three of the testers from the first year also participated in the testing the second year.

In the Fall of the third year, there 5 testers, 2 male, 3 female. In the Spring, there were 4 testers, 2 male, 2 female. Two of the third-year testers had also tested in the second year and another had tested in the first year. There were no testers who participated in all six testing periods of the study.

Testing procedures

In the Fall of each year, testing began as soon as the schools allowed us to start. The schools differed somewhat in the length of time they wanted us to wait in order to give the children time to adjust to the start of school. In the Spring, we began testing from the middle or the end of April, depending on the number of children to be tested, and the closing date of the school.

In the first year of the study, schools were recruited in the Fall. Therefore, testing in each school did not begin until we had met with the director and teachers to discuss the study and our procedures.

Before each testing period began, the testers spent sufficient time in the classrooms to give the children the opportunity to become comfortable with them. Testers followed the teachers' recommendations about when to begin testing. The children were told that they were going to play some games and look at pictures with the tester, and were individually taken out of class to a room made available by the school.

The child was seated at a small table with the tester, who had previously set up the materials to be used. The test battery was administered individually, and took a maximum of forty minutes to administer. If that was too long a period for a child to sustain attention and effort, he or she was tested in two sessions. In a small number of cases, it took three sessions to finish a battery. The intelligence test was always administered first, and the sex-role measures were given in predetermined alternating orders to balance out possible order effects.

In the first year, at the pretesting, half the boys, and half the girls at each age level were tested by a male, and half by a female. Sex of tester was counterbalanced at the posttesting.

In the second year, at the pretesting, children who had been posttested in the first year by a male were pretested by a male; children posttested by a female were pretested by a female. Sex of tester was counterbalanced at the posttesting. For the pretesting in the third year, sex of tester was the same as it had been for the posttesting of the previous year. Sex of tester was again counterbalanced at the posttesting.

Difficulties

There were two main areas of difficulty encountered in the testing program: practical problems within the schools, which slowed the progress of testing; and children who could not be tested.

School related problems: In most schools, there was room for only two testers at a time, and in some schools, for only one. Another factor which slowed the testing was the restrictions teachers set on when children could be taken out of the classroom, in order to minimize the disruption. We worked within the space and time restrictions of the schools, and planned our testing schedules accordingly.

An additional problem in the lower income schools was that children moved from one class to another during the year. For the purpose of data analysis, these children were grouped with their posttest class.

Child-related problems: Children who could not be tested included those whose parents refused permission to test; those who were unable to do the tasks because of poor English; and those who were absent during the entire time we were testing in the school. There were also children who, within a year, either started school after the pretesting or left before posttesting and thus were only tested once that year. A final category of non-tested children were those who for various intellectual and emotional reasons were not willing or did not appear to be able to participate in the testing. If a child became fearful or non-cooperative, the tester returned the child to the classroom and attempted to test at another time if the child was more willing. In some cases, testers did not take children from the classroom. The children were never forced to go with the tester or to take the tests.

Testing Tables

The numbers of subjects comprising the most important testing samples are given in Tables 49 through 64; these tables refer to subjects who were tested, regardless of whether or not they were observed. Some of the tables are organized by school income level, sex and age; while others present include information for each test individually.

Within each of the three years, the N's for the following samples are given:

	Table Number		
	Year One	Year Two	Year Three
Number of subjects who were tested on at least one (any) pretest, or one (any) posttest, or at least one (the same) pretest and posttest, by Class, School Income Level, Sex, and Age	49	54	58
Number of subjects taking at least one pretest and one posttest (the same) by School Income Level, Sex, and Age	50	50	50

	Table Number		
	Year One	Year Two	Year Three
Number of subjects tested on at least one (any) pretest, one (any) posttest, and/or at least one (any) pretest and one (any) posttest, By School Income Level, Sex, and Age	51	55	55
Number of subjects taking the pretest and/or posttest versions of each test, By Test, School Income Level, Sex, and Age	52	56	59
Number of subjects taking both pretest and posttest versions of each test, By Test, School Income Level, Sex, and Age	53	52	60

N's for the Between-Years Testing Samples are given in Tables 61-64. Table 61 presents the number of subjects taking at least one (any) pretest and/or one (any) posttest in any two years of the study. Table 62 shows the number of subjects who took the pretest versions of each of the tests, in years 1 and 2, 1 and 3, and years 2 and 3. The number of subjects taking the posttest versions of each test in any two years are also summarized. In Table 63 are the number of subjects who took both pretest and posttest versions of each test in any two years of the study. Table 64 gives the number of subjects who were tested on each (the same) pretest, each (the same) posttest, and/or any pretest and posttest in all three years of the study.

Table 49

Number of Subjects Tested on at Least One Pretest, or One Posttest, or the Same Pretest and Posttest, by Class, School Income Level, Sex, and Age: Year One

School I.D.	Class Age	Number of Subjects Pretested			Number of Subjects Posttested			Number of Subjects Pre- and Posttested		
		Males	Females	Total	Males	Females	Total	Males	Females	Total
Lower Income										
07	3	4	5	9	7	4	11	3	6	9
	4	7	3	10	10	8	18	6	4	10
08	3	4	8	12	3	7	10	3	7	10
09	3	7	6	13	8	7	15	6	6	12
	4	9	5	14	12	9	21	10	7	17
10	3	6	2	8	5	3	8	3	5	8
	4	8	7	15	15	6	21	10	6	16
	5	10	10	20	10	8	18	10	8	18
11	5	15	10	25	15	8	23	13	8	21
12	3	10	12	22	4	4	8	6	4	8
	4	9	13	22	11	9	20	9	9	18
	5	9	14	23	8	16	24	8	14	22
Total		98	95	193	108	89	197	87	84	171

Table 49 (cont.)

School I.D.	Class Age	Number of Subjects Pretested			Number of Subjects Posttested			Number of Subjects Pre- and Posttested		
		Males	Females	Total	Males	Females	Total	Males	Females	Total
Middle Income										
01	3	6	7	13	7	7	14	5	7	12
	4	5	6	11	4	8	12	4	6	9
	5	7	10	17	7	10	17	7	10	17
02	3	4	7	11	4	7	11	3	7	10
	3	9	8	17	9	7	16	8	7	16
	3	10	6	16	9	6	15	7	5	13
	4	9	8	17	11	8	19	9	7	16
	4	8	9	17	9	8	17	8	7	15
	5	4	7	11	5	8	13	7	7	11
	5	13	13	26	12	11	23	8	11	22
03	3	10	6	16	6	5	11	6	6	11
	4	13	6	19	10	4	14	10	4	14
Total		98	93	191	93	89	182	82	84	166
Total Sample		196	188	384	201	178	379	167	168	337

Table 50

Number of Subjects Taking at Least One Pretest and One (the Same) Posttest, by School Income Level, Sex, and Age: Years One, Two, and Three

	School Income Level								
	Low Income			Middle Income			Total		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
Year One									
3 Year Olds	18	21	39	33	31	63	51	52	103
4 Year Olds	42	28	70	29	24	53	71	52	123
5 Year Olds	32	32	64	22	27	49	54	59	113
Total	92	81	173	84	82	165	176	164	339
Year Two									
4 Year Olds	23	18	41	25	28	53	48	46	94
5 Year Olds	37	19	56	18	11	29	55	47	85
Total	60	37	97	43	39	82	103	93	179
Year Three									
5 Year Olds	17	18	35	17	14	31	34	32	66

Table 51

Number of Subjects Tested on at Least One (Any) Pretest, One (Any) Posttest, and at Least One (Any) Pretest and One (Any) Posttest, by School Income Level, Sex, and Age: Year One

School Income Level	Number of Subjects Pretested			Number of Subjects Posttested			Number of Subjects Pre- and Posttested		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
Low Income									
3 Year Olds	28	30	58	26	27	53	18	22	40
4 Year Olds	47	33	80	46	35	81	42	28	70
5 Year Olds	35	39	74	33	32	65	32	32	64
Total	110	102	212	105	94	199	92	82	174
Middle Income									
3 Year Olds	40	34	74	36	33	69	33	31	64
4 Year Olds	33	29	62	34	28	62	29	24	53
5 Year Olds	24	29	53	24	29	53	22	27	49
Total	97	92	189	94	90	184	84	82	166
Total									
3 Year Olds	68	64	132	62	60	122	51	53	104
4 Year Olds	80	62	142	80	63	143	71	52	123
5 Year Olds	59	68	127	57	61	118	54	59	113
Grand Total	207	194	401	199	184	383	176	164	340

Table 52

Number of Subjects Taking Pretest and/or Posttest Version of Each Test, by School Income Level, Sex, and Age: Year One

School	Test													
	PVT		DAP		OPT		NRT		TPT		BIT		Composite[a]	
Income Level	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Low Income	207	196	208	196	165	160	186	157	213	199	211	199	214	200
Males	107	104	106	103	85	86	92	80	110	105	109	105	111	106
3 Year Olds	28	27	27	24	17	19	22	16	28	26	28	26	29	27
4 Year Olds	45	45	45	46	37	40	39	34	47	46	47	46	47	46
5 Year Olds	34	32	34	33	31	27	31	30	35	33	34	33	35	33
Females	100	92	102	93	80	74	94	77	103	94	102	94	103	94
3 Year Olds	31	27	30	26	21	20	24	22	31	27	30	27	31	27
4 Year Olds	30	33	33	35	23	27	32	29	33	35	33	35	33	35
5 Year Olds	39	32	39	32	36	27	38	26	39	32	29	32	39	32
Middle Income	189	184	185	168	172	175	174	159	185	184	189	184	191	185
Males	96	94	94	83	93	91	86	81	94	94	97	94	98	94
3 Year Olds	40	36	38	30	42	28	31	30	37	36	40	36	40	36
4 Year Olds	32	34	32	33	27	29	31	27	33	34	33	34	34	34
5 Year Olds	24	24	24	20	24	24	24	24	24	24	24	24	24	24
Females	93	90	91	85	79	84	88	78	91	90	92	90	93	91
3 Year Olds	34	33	34	28	26	29	31	24	34	33	34	33	34	34
4 Year Olds	29	28	29	28	28	26	29	26	29	28	29	28	29	28
5 Year Olds	30	29	28	29	25	29	28	28	28	29	29	29	30	29
Total Sample	396	380	393	364	337	335	360	316	398	383	400	383	405	385

[a]The composite represents the number of subjects who took at least one pretest, or one posttest.

Table 53

Number of Subjects Taking Both Pretest and Posttest Versions of Each Test, by School Income Level, Sex, and Age: Year One

	Test					
School Income Level	PVT	DAP	OPT	NRT	TPT	BIT
Low Income	168	170	123	135	174	173
Males	89	89	68	68	92	92
3 Year Olds	18	17	12	13	18	18
4 Year Olds	40	40	32	28	42	42
5 Year Olds	31	32	24	27	32	32
Females	79	81	55	67	82	81
3 Year Olds	22	21	12	18	22	21
4 Year Olds	25	28	18	24	28	28
5 Year Olds	32	32	25	25	32	32
Middle Income	166	147	140	136	163	166
Males	83	71	75	67	82	84
3 Year Olds	33	26	31	23	31	33
4 Year Olds	28	27	22	22	29	29
5 Year Olds	22	18	22	22	22	22
Females	83	76	65	69	81	82
3 Year Olds	31	26	21	22	31	31
4 Year Olds	24	24	21	22	24	24
5 Year Olds	28	26	23	25	26	27
Total Sample	334	317	263	271	337	339

Note. PVT = Peabody Picture Vocabulary Test; DAP = Draw-A-Person; OPT = Occupational Preference Test; NRT = Nadleman Recall Test; TPT = Toy Preference Test; BIT = It Scale.

Table 54

Number of Subjects Tested on at Least One Pretest, or One Posttest, or the Same Pretest and Posttest, by Class, School Income Level, Sex, and Age: Year Two

School I.D.	Class Age	Number of Subjects Pretested			Number of Subjects Posttested			Number of Subjects Pre- and Posttested		
		Males	Females	Total	Males	Females	Total	Males	Females	Total
Lower Income										
07	4	9	5	14	5	3	8	4	2	6
	5	7	5	12	7	5	12	6	4	10
08	4	1	2	3	0	1	1	0	1	1
	4	6	5	11	5	5	10	4	5	9
09	4	1	0	1	0	0	0	0	0	0
	4	6	6	12	7	5	12	7	4	11
	5	12	2	14	12	2	14	12	1	13
10	4	3	3	6	3	2	5	2	2	4
	5	7	6	13	7	5	12	6	4	10
12	4	1	2	3	1	2	3	1	2	3
	4	6	6	12	6	5	11	6	5	11
	5	11	7	18	11	7	18	11	7	18
Total		70	49	119	64	42	106	59	37	96

Table 54 (cont.)

School I.D.	Class Age	Number of Subjects Pretested			Number of Subjects Posttested			Number of Subjects Pre- and Posttested		
		Males	Females	Total	Males	Females	Total	Males	Females	Total
Middle Income										
01	4	4	5	9	4	5	9	2	5	7
	5	4	4	8	4	3	7	4	2	6
02	4	2	4	6	1	4	5	1	4	5
	4	7	7	14	7	7	14	6	7	13
	4	7	8	15	9	8	17	8	8	16
	5	10	7	17	9	6	15	9	6	15
03	4	2	0	2	4	0	4	2	0	2
	4	4	1	5	4	1	5	4	1	5
Total		40	36	76	42	34	76	36	33	69
Total (Old Schools)		110	85	195	106	76	182	95	70	165

Table 54 (cont.)

Number of Subjects Tested on at Least One Pretest, or One Posttest, or the Same Pretest and Posttest, by Class, School Income Level, Sex, and Age: Year Two (New Schools)

	Class	Number of Subjects Pretested			Number of Subjects Posttested			Number of Subjects Pre- and Posttested		
School I.D.	Age	Males	Females	Total	Males	Females	Total	Males	Females	Total
Low Income	5	0	1	1	0	1	1	0	1	1
Middle Income										
13	4	0	1	1	0	1	1	0	1	1
	5	0	1	1	0	1	1	0	1	1
14	4	0	1	1	0	1	1	0	1	1
17	4	1	0	1	1	0	1	1	0	1
19	4	0	1	1	0	1	1	0	1	1
25	4	1	0	1	1	0	1	1	0	1
26	4	1	0	1	1	0	1	1	0	1
28	4	1	1	2	1	1	2	1	1	2
16	5	0	0	0	0	1	1	0	0	0
15	5	1	0	1	1	0	1	1	0	1

Table 54 (cont.)

School I.D.	Class Age	Number of Subjects Pretested			Number of Subjects Posttested			Number of Subjects Pre- and Posttested		
		Males	Females	Total	Males	Females	Total	Males	Females	Total
18	5	1	0	1	1	0	1	1	0	1
20	5	0	1	1	0	0	0	0	0	0
21	5	0	0	0	1	0	1	0	0	0
22	5	1	0	1	1	0	1	1	0	1
23	5	2	0	2	2	0	2	2	0	2
24	5	0	1	1	0	1	1	0	1	1
Total in New Schools		9	8	17	10	8	18	9	7	16
Total Sample		119	93	212	116	84	200	104	77	181

Table 55

Number of Subjects Tested on at Least One (Any) Pretest, One (Any) Posttest, and at Least One (Any) Pretest and One (Any) Posttest, by School Income Level, Sex, and Age: Years Two and Three

School Income Level	Number of Subjects Pretested			Number of Subjects Posttested			Number of Subjects Pre- and Posttested		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
Year Two									
Low Income									
4 Year Olds	32	28	60	25	20	45	23	18	41
5 Year Olds	39	23	62	39	22	61	37	19	56
Total	71	51	122	64	42	106	60	37	97
Middle Income									
4 Year Olds	27	30	57	31	29	60	25	29	54
5 Year Olds	19	14	33	18	13	31	18	11	29
Total	46	44	90	49	42	91	43	40	83
Total									
4 Year Olds	59	58	117	56	49	105	48	47	95
5 Year Olds	58	37	95	57	35	92	55	30	85
Grand Total	117	95	212	113	84	197	103	77	180
Year Three									
Low Income									
5 Year Olds	22	20	42	20	19	39	17	18	35
Middle Income									
5 Year Olds	20	16	36	17	15	32	17	14	31
Total Sample	42	36	78	37	34	71	34	32	66

Table 56

Number of Subjects Taking Pretest and/or Posttest Version of Each Test, by School Income Level, Sex, and Age: Year Two

School	Test													
	PVT		DAP		OPT		NRT		TPT		BIT		Composite[a]	
Income Level	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Low Income	117	108	114	105	92	92	108	94	118	106	118	107	123	117
Males	67	66	65	63	53	56	59	54	67	64	67	65	71	74
4 Year Olds	28	27	27	24	17	19	22	16	28	26	28	26	32	35
5 Year Olds	39	39	38	39	36	37	37	38	39	38	39	39	39	39
Females	50	42	49	42	38	36	49	40	51	42	51	42	52	43
4 Year Olds	28	20	26	20	21	16	27	18	28	20	28	20	28	20
5 Year Olds	22	22	23	22	17	20	22	22	23	22	23	22	23	23
Middle Income	88	80	88	91	84	87	88	87	88	90	90	91	91	91
Males	44	38	43	49	42	47	44	47	46	49	46	49	46	49
4 Year Olds	26	30	25	31	24	31	26	29	27	31	27	31	27	31
5 Year Olds	18	18	18	18	18	16	18	18	19	18	19	18	19	18
Females	44	42	45	42	42	40	44	40	42	41	44	42	45	42
4 Year Olds	31	29	31	29	29	28	30	27	29	28	30	29	31	29
5 Year Olds	13	13	14	13	13	12	14	13	13	13	14	13	14	13
Total Sample	205	188	202	196	176	179	196	181	206	196	208	198	214	208

[a]The composite represents the number of subjects who took at least one pretest, or one posttest.

Table 57

Number of Subjects Taking Both Pretest and Posttest Versions of Each Test, by School Income Level, Sex, and Age: Year Two

	Test					
School Income Level	PVT	DAP	OPT	NRT	TPT	BIT
Low Income	93	92	85	82	96	97
Males	57	56	49	47	59	60
4 Year Olds	20	20	16	13	23	23
5 Year Olds	37	36	33	34	36	37
Females	36	36	26	35	37	37
4 Year Olds	18	17	14	17	18	18
5 Year Olds	18	19	12	18	19	19
Middle Income	80	80	72	78	81	82
Males	41	40	37	41	43	43
4 Year Olds	24	23	22	24	25	25
5 Year Olds	17	17	15	17	18	18
Females	39	40	35	37	38	39
4 Year Olds	29	29	26	26	27	28
5 Year Olds	10	11	9	11	11	11
Total Sample	173	172	157	160	177	179

Note. PVT = Peabody Picture Vocabulary Test; DAP = Draw-A-Person; OPT = Occupational Preference Test; NRT = Nadleman Recall Test; TPT = Toy Preference Test; BIT = It Scale.

Table 58

Number of Subjects Tested on at Least One Pretest, or One Posttest, or the Same Pretest and Posttest, by Class, School Income Level, Sex, and Age: Year Three

School I.D.	Class Age	Number of Subjects Pretested			Number of Subjects Posttested			Number of Subjects Pre- and Posttested		
		Males	Females	Total	Males	Females	Total	Males	Females	Total
Lower Income										
07	5	6	3	9	4	2	6	4	2	6
08	5	1	0	1	1	0	1	1	0	1
	5	3	4	7	1	5	6	1	5	6
09	5	4	3	7	4	3	7	3	3	6
10	5	2	3	5	1	4	5	1	3	4
12	5	2	2	4	1	2	3	1	2	3
	5	4	2	6	4	2	6	4	2	6
Total		22	17	39	16	18	34	15	17	32
Middle Income										
01	5	2	1	3	2	1	3	2	1	3
02	5	0	1	1	0	1	1	0	1	1
	5	5	5	10	2	3	5	2	3	5
	5	8	7	15	9	5	14	9	5	14
Total		15	14	29	13	10	23	13	10	23
Total (Old Schools)		37	31	68	29	28	57	28	27	55

Table 58 (cont.)

Number of Subjects Tested on at Least One Pretest, or One Posttest, or the Same Pretest and Posttest, by Class, School Income Level, Sex, and Age: Year Three (New Schools)

School I.D.	Class Age	Number of Subjects Pretested			Number of Subjects Posttested			Number of Subjects Pre- and Posttested		
		Males	Females	Total	Males	Females	Total	Males	Females	Total
Lower Income										
33	5	1	0	1	1	0	1	1	0	1
34	5	1	0	1	0	1	1	0	1	1
35	5	0	1	1	1	0	1	1	0	1
36	5	1	0	1	1	0	1	1	0	1
38	5	1	0	1	1	0	1	1	0	1
Total		4	1	5	4	1	5	4	1	5
Middle Income										
13	5	0	1	1	0	1	1	0	1	1
19	5	0	1	1	0	1	1	0	1	1
26	5	1	1	2	1	1	2	1	1	2
30	5	1	0	1	1	0	1	1	0	1
31	5	0	1	1	0	1	1	0	1	1
32	5	1	0	1	1	0	1	1	0	1
37	5	1	0	1	1	0	1	1	0	1
Total		4	4	8	4	4	8	4	4	8
Total (New Schools)		8	5	13	8	5	13	8	5	13
Total Sample		45	36	81	37	33	70	36	32	68

Table 59

Number of Subjects Taking Pretest and/or Posttest Version of Each Test, by School Income Level, Sex, and Age: Year Three

School	Test													
	PVT		DAP		OPT		NRT		TPT		BIT		Composite[a]	
Income Level	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Low Income	42	37	43	38	36	38	36	38	42	39	44	39	43	39
Males														
5 Year Olds	22	18	23	20	17	20	17	19	22	20	22	20	23	20
Females														
5 Year Olds	20	19	20	18	19	18	19	19	20	19	20	19	20	19
Middle Income	35	32	34	32	33	31	35	32	36	32	36	32	37	34
Males														
5 Year Olds	19	17	18	17	18	16	19	17	20	17	20	17	20	17
Females														
5 Year Olds	16	15	16	15	15	15	16	15	16	15	16	15	17	17
Total Sample	77	69	77	70	69	69	71	70	78	71	80	71	80	73

[a]The composite represents the number of subjects who took at least one pretest, or one posttest.

Table 60

Number of Subjects Taking Both Pretest and Posttest Versions of Each Test, by School Income Level, Sex, and Age: Year Three

	Test					
School Income Level	PVT	DAP	OPT	NRT	TPT	BIT
Low Income	34	36	30	29	35	35
Males						
5 Year Olds	16	18	14	12	17	17
Females						
5 Year Olds	18	18	16	17	18	18
Middle Income	31	30	27	30	31	31
Males						
5 Year Olds	17	16	14	16	17	17
Females						
5 Year Olds	14	14	13	14	14	14
Total Sample	65	66	57	59	66	66

Note. PVT = Peabody Picture Vocabulary Test; DAP = Draw-A-Person; OPT = Occupational Preference Test; NRT = Nadleman Recall Test; TPT = Toy Preference Test; BIT = It Scale.

Table 61

Number of Subjects Taking at Least One (Any) Pretest and/or One Posttest in Years 1 and 2, 1 and 3, and 2 and 3

	Years 1 and 2		Years 1 and 3		Years 2 and 3	
School Income Level	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest
Low Income	95	87	27	26	36	33
Males	55	52	14	13	20	16
3 Year Olds	20	15	14	13	20	16
4 Year Olds	35	37	-	-	-	-
Females	40	35	13	13	16	17
3 Year Olds	21	17	13	13	16	17
4 Year Olds	19	18	-	-	-	-
Middle Income	79	83	32	28	33	32
Males	40	43	18	14	15	16
3 Year Olds	24	27	18	14	15	16
4 Year Olds	16	16	-	-	-	-
Females	39	40	14	14	18	16
3 Year Olds	26	27	14	14	18	16
4 Year Olds	13	13	-	-	-	-
Total Sample	174	170	59	54	69	65

Table 62

Number of Subjects Tested on Each (the Same) Pretest and/or Posttest in Two Years of the Study, by School Income Level, Sex, and Age at Beginning of Study

	Test											
	PVT		DAP		OPT		NRT		TPT		EIT	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Years 1 and 2												
Low Income	90	86	83	87	62	69	76	67	94	85	94	86
Males	53	52	49	52	41	43	43	38	54	50	54	51
3 Year Olds	19	15	17	15	11	12	14	11	19	14	19	14
4 Year Olds	34	37	32	37	30	31	29	27	35	35	35	37
Females	37	34	39	35	21	26	33	29	40	35	40	35
3 Year Olds	21	17	20	17	9	12	15	12	21	17	21	17
4 Year Olds	16	17	19	18	12	14	18	17	19	18	19	18
Middle Income	73	81	73	73	57	69	70	65	76	83	78	83
Males	35	44	35	37	26	33	35	31	39	43	40	43
3 Year Olds	22	27	21	22	14	20	20	20	23	27	24	27
4 Year Olds	13	17	14	15	12	13	15	11	16	16	16	16
Females	38	37	38	36	31	36	35	34	37	40	38	40
3 Year Olds	26	24	26	23	20	24	23	21	24	27	25	27
4 Year Olds	12	13	12	13	11	12	12	13	13	13	13	13
Total Sample	163	167	161	160	119	138	146	132	170	168	172	169

Table 62 (cont.)

	Test											
	PVT		DAP		OPT		NRT		TPT		BIT	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Years 1 and 3												
Low Income	26	26	25	25	16	18	19	18	25	25	26	25
Males												
3 Year Olds	13	13	12	13	8	9	9	9	12	12	13	12
Females												
3 Year Olds	13	13	13	12	8	9	10	9	13	13	13	13
Middle Income	32	28	29	23	21	21	25	21	31	28	32	28
Males												
3 Year Olds	18	14	15	12	12	9	13	10	17	14	18	14
Females												
3 Year Olds	14	14	14	11	9	12	12	11	14	14	14	14
Total Sample	58	54	54	48	37	39	44	39	56	53	58	53
Years 2 and 3												
Low Income	31	32	33	32	23	26	28	26	35	33	35	33
Males												
3 Year Olds	15	15	17	16	10	13	13	11	19	16	19	16
Females												
3 Year Olds	16	17	16	16	13	13	15	15	16	17	16	17
Middle Income	32	32	30	32	27	31	30	30	32	32	32	32
Males												
3 Year Olds	14	16	12	16	11	15	13	15	15	16	15	16
Females												
3 Year Olds	18	16	18	16	16	16	17	15	17	16	17	16
Total Sample	63	64	63	64	50	57	58	56	67	55	67	65

Table 63

Number of Subjects Tested on Both Pretest and Posttest Versions of Each Test in Two Years of the Study, by School Income Level, Sex, and Age at Beginning of Study

	Test					
School Income Level	PVT	DAP	OPT	NRT	TPI	BIT
Years 1 and 2						
Low Income	70	67	50	47	73	74
Males	47	42	33	31	47	48
3 Year Olds	14	11	8	8	14	14
4 Year Olds	33	31	25	23	33	34
Females	23	25	17	16	26	26
3 Year Olds	10	10	4	8	11	11
4 Year Olds	13	15	13	8	15	15
Middle Income	62	56	41	48	66	68
Males	28	25	18	22	32	33
3 Year Olds	17	15	10	14	19	20
4 Year Olds	11	10	8	8	13	13
Females	34	31	23	26	34	35
3 Year Olds	24	21	16	17	24	24
4 Year Olds	10	10	7	9	10	11
Total Sample	132	123	91	95	139	142
Years 1 and 3						
Low Income	18	16	10	14	18	18
Males: 3 Year Olds	9	7	5	6	9	9
Females: 3 Year Olds	9	9	5	8	9	9

Table 63(cont.)

School Income Level	Test					
	PVT	DAP	OPT	NRT	TPT	BIT
Middle Income	25	21	12	15	26	26
Males: 3 Year Olds	12	10	6	7	13	13
Females: 3 Year Olds	13	11	6	8	13	13
Total Sample	43	37	22	29	44	44
Years 2 and 3						
Low Income	26	25	17	19	27	27
Males: 3 Year Olds	12	11	8	7	14	14
Females: 3 Year Olds	14	14	9	12	13	13
Middle Income	23	24	19	18	24	24
Males: 3 Year Olds	10	11	7	9	12	12
Females: 3 Year Olds	13	13	12	9	12	12
Total Sample	49	49	36	37	51	51

Table 64

Number of Subjects Tested on Each (The Same) Pretest and/or Posttest, and Any Pretest and Posttest in All Three Years of the Study, by School Income Level and Sex

	School Income Level					
	Low Income		Middle Income		Total	
Test	Males	Females	Males	Females	Males	Females
PVT						
Pre	12	13	13	14	25	27
Post	11	11	14	14	25	25
Pre and Post	8	8	10	13	18	21
DAP						
Pre	11	13	11	14	20	27
Post	11	11	12	11	21	22
Pre and Post	7	8	9	11	16	19
OPT						
Pre	5	7	7	9	12	16
Post	8	7	9	12	17	19
Pre and Post	4	3	4	6	8	9
NRT						
Pre	8	9	12	12	20	21
Post	8	6	9	11	17	17
Pre and Post	5	6	7	10	12	16
TPT						
Pre	11	12	14	13	25	25
Post	10	12	14	14	24	26
Pre and Post	8	8	11	12	19	20

Table 64 (cont.)

School Income Level

	Low Income		Middle Income		Total	
Test	Males	Females	Males	Females	Males	Females
BIT						
Pre	12	13	14	13	26	26
Post	10	12	14	14	24	26
Pre and Post	8	8	11	12	19	20
Any Test						
Pre	13	13	14	14	27	27
Post	11	12	14	14	25	26
Pre and Post	8	8	11	13	19	21

Chapter VI

OBSERVATIONS

In this chapter, the behaviors and observation procedures are presented, and the training of observers is discussed.

Background

In addition to all of the reasons for using observations mentioned in the Design chapter, we were also concerned with ecological validity. Do children respond to questions about sex roles (e.g., "What do you want to be when you grow up?", "Which toy would you (or 'It') rather play with?") posed by adults one way, namely in terms of what they think the adult wants to hear, but in fact act another way? Is sex typing evident in the actual behavior of preschool children? If so, in which behaviors? Are boys really more aggressive than girls and girls more dependent than boys? And what, exactly, do we mean by these terms? Is all aggression and dependency dysfunctional? Or may certain forms of these behaviors be used to advantage? Does cooperative behavior really show sex typing?

When planning this study, we chose to include aggressive, dependent, and cooperative behaviors since these have traditionally been associated with sex typing. On the following pages, selective research relevant to these topics is briefly reviewed. What follows is by no means intended as an exhaustive review of these topics. Rather, it is meant to show what the condition of research on aggression, dependency, and cooperation was when the study was conceived. Therefore, only studies predating 1974 are included. The behaviors that were finally chosen for inclusion in this study were based upon this research.

Aggression

Aggression has been defined as "a sequence of behavior, the goal reaction of which is the injury of the person toward whom it is directed" (Bandura & Walters, 1963, p. 365). Sex differences in aggression have been seen as early as three years of age (Feshbach, 1970). Some studies of aggression have found that boys are more aggressive than girls. For example, Dawe (1934), Green (1933), Jersild and Markey (1935), and McCandless, Lous, and Bennett (1961) showed that boys were more quarrelsome. More doll play aggression was shown by boys than girls (Bach, 1945; Gordon & Smith, 1965; Hollenberg & Sperry, 1951; Sears, P., 1951). Hattwick (1937) found that boys showed more negativistic behaviors such as grabbing and other types of overt physical aggression. Johnson (1951) and Sears (1961), however, found more prosocial aggression in girls. The differential occurrence of aggressive behaviors in the two sexes may be explainable in part by reinforcement from adults for particular behaviors. Sears, Maccoby, and Levin (1957), for example, showed that parents made the greater distinctions in responding to aggression in boys than girls, and Serbin, O'Leary, Kent, and Tonick (1973) found that teachers responded more to aggression in boys than in girls.

Bardwick (1971, p. 133) summarized the state of sex differences in aggression as follows: "While males and females may have similar aggressive needs, males can express their aggressions much more directly than females and can do so without guilt. Females are more likely to inhibit the direct expression of aggression." In other words, Bardwick is saying that the differences that are mani-

fested in aggression most likely result from the socialization process; specifically, males are reinforced for and are permitted to engage in physically aggressive acts, while females are taught to sublimate and channel their aggression into prosocial acts more in keeping with the "feminine" role.

The aggressive behaviors observed in this study permitted a close examination of the occurrences of and responses to different types of aggression: Constructive assertion (prosocial, assertive acts), destructive physical aggression, and destructive verbal aggression.

Dependency

Dependency has been defined in a variety of ways. For example,

Maslow (1971): "The need for emotional or authoritative support in most situations, difficulty in making independent decisions, and taking on responsibility, and the dread of loneliness."
Sears (1953) and Beller (1955): "The extent to which one seeks help, guidance, physical contact, proximity, attention, and recognition."
Heathers (1955): "Frequency of affection-seeking and attention-seeking."
Schacter (1959): "The extent to which the individual uses or relies on other people as sources of approval, support, help, and reference."
Bardwick (1971): "Leaning on someone else to provide support.

Various studies have shown that the forms dependency behaviors take change with age. For example, two year olds showed more dependency toward teachers, while by age four, more dependency was shown toward peers (Heathers, 1955). Gewirtz (1948) saw more clinging and lapsitting in 4 year olds, and more mature dependency such as attention- and approval-seeking in 5 year olds.

Few sex differences in dependency behaviors have been found before the age of 3 years. The findings for preschoolers are contradictory. Girls were found to be more dependent in the following studies: McCandless, Lous, & Bennett (1961): Girls were higher on emotional dependence; Zunich (1964): Girls sought more contact while problem solving; Siegel, Stolz, Hitchcock, & Adamson (1959), and Whiting and Whiting (1962): Girls were higher on succorance-sociability; and Beller and Turner (1962), Hattwick (1937), and Sears, Whiting, Nowles, & Sears (1953): Girls sought more physical contact. On the other hand, boys have also been found to be more dependent in that they were more clinging in testing situations (Levy & Tulchin, 1925); showed more negative attention-seeking (Sears et al., 1965); asked for more help while problem solving (Zunich, 1964); and asked for more unnecessary help (Hattwick, 1937). Many studies found no sex differences in dependency behavior: Heathers (1955), Crandall and Rabson (1960), Hartup and Kelly (1960), and Marshall and McCandless (1957), for example.

With increasing age, the higher incidence of dependency behaviors in females becomes more apparent. For example, Janis and Field (1959), Walker and Heyns (1962), and Witkin, Lewis, Herzman, Machover, Meisner, and Wagner (1954) have shown that females are more affiliative, and feel more dependent, suggestible, and obedient than do males. McGuire (1961), Kagan and Moss (1962), and Brim, Glass, Lavin, and Goodman (1962) found that girls from adolescence on rated themselves as lower on independence than did males.

These differences between the early contradictory results and later noncontradictory ones indicate that there is a powerful process occurring which instills

dependency in females beginning at an early age. Our study permits an examination of this early development.

Attempts have been made previously to more carefully define dependency. Although the term usually carries a negative connotation, some types of dependency are more positive than negative. For example, Bardwick (1971) distinguishes between instrumental dependency ("objective help is sought"), emotional dependency ("affection, support, and comfort are the goals"), and aggressive dependency ("the objectives of which are negative and manipulative" (p. 119). And Fiscalini (1972) distinguishes between productive dependency ("used to enhance interpersonal contacts, to foster better communication; and to promote or validate the development of interpersonal and personal skills, abilities, or competencies," (p. 29), and disjunctive dependency ("used to maintain or secure interpersonal distance, to disrupt cooperation, to promote or maintain neurotic patterns of interaction, to maintain neurotic and unproductive patterns of interaction, to maintain neurotic and unproductive patterns of helplessness, inadequacy, incompetencies, hostility, and withdrawal; and to obstruct the development of the productive person" (p. 33). This study permits exploration of both positive (productive) and negative (disjunctive) types of dependency behaviors that children show to other children and to their teachers. The study will also permit an examination of whether the different types of dependency behaviors are differentially reinforced along sex lines.

Cooperation

As Cook and Stingle (1974) have pointed out, cooperation is a relatively unexplored, although highly important area of investigation. In particular, there have been few studies of the development of cooperative behavior. The effects of socialization on cooperation have also received minimal attention.

Studies that have focussed on age as a major variable have found that cooperative behavior increases with age. An early observational study (Parten, 1932) defined cooperative play as "The organization of activity so that the efforts of the children are supplemented by those of another." Parten found that preschoolers, ages 3 to 5, progressed from solitary play, to looking on, to parallel play, to associated play, to associated group play, and finally to cooperative play. Barnes (1971) pointed out that although Parten's norms were 40 years old, they were still presented in modern textbooks on child development. Barnes therefore replicated Parten's study and found that although cooperative behavior increased with age, the play behavior of preschoolers is less social, particularly, less cooperative, than it was 40 years ago. Possible explanations offered by Barnes are the number of hours preschoolers are exposed to the mass media, which may keep them from playing with peers; the fact that modern toys may be more conducive to solitary play; smaller families, which reduces sibling relationships; and the possibility that modern parents give more reinforcement for solitary play than peer play. Although not mentioned by Barnes, the modern teacher may be more achievement oriented and consequently may not encourage cooperation as strongly as more solitary play. In any case, as Barnes pointed out, the small size of his sample (only 42 subjects) and the fact that his subjects were all from a small Canadian community limit the generalizability of his findings. Clearly, more observational studies of preschool-age children are needed in order to trace the development of cooperative behavior. The role of the teacher in this development should also be studied. This present investigation therefore included observations of cooperative behavior among children between 3- and 5-years of age.

Some research has dealt with developmental changes in cooperative behavior on specific tasks. Gottschaldt & Frangaur-Ziegler (1958) studied German children. They found that 2- to 3-year-olds showed no cooperative behavior; 3- to 4-year-olds achieved partial cooperation in working toward a common goal; and 4- to 6-year-olds achieved complete cooperation in working toward a common goal and working for each other in true "aiding" behavior. Zak (1968) found that among Polish children, 3 and 4 year olds did not play collectively, while 6 and 7 year olds showed complete cooperation on a toy block construction task. Hirota (1951) reported similar findings with Japanese children playing with a similar task: While competition was grasped by 4 year olds, children did not participate in cooperative group work until 6- to 7-years of age.

The few studies of the differences in cooperative behavior between socioeconomically lower-and middle-class children have yielded conflicting results. Moreover, most of the studies involved older children. Only two dealt with preschoolers. McKee and Leader (1955) found that lower-class preschool boys were more competitive than middle-class boys, but Nelson and Madsen (1969) reported no significant differences in the behavior of pairs of 4-year-old Black and White Headstart and middle-class children playing the Cooperation game.

Sex differences is another area of interest in the study of cooperative behavior. Most of the studies, however, have been of older children and adults. The relatively few studies of sex differences in cooperation among preschoolers have yielded somewhat conflicting results, although the majority have found no evidence of sex differences at this age.

The following studies have found no significant differences: Nelson and Madsen (1969) found no sex differences in Black and White 4-year-old, same-sex pairs, using the Cooperative Game Board Game. Brotsky and Thomas (1967) found no significant sex differences among same-sex pairs of preschoolers on a multiple choice button pressing task similar to that used by Brotsky and Thomas (1967). Kagan and Madsen (1971) studied same-sex pairs of children from 4- to 5-years of age, and from 7- to 9. They found no sex differences in cooperative behavior on the Circle Matrix Board.

Spiro (1965) studied kibbutz children ranging in age from one to five. He found girls in all age groups to be more "integrative," (i.e., give, share, aid, act affectionately, cooperate) than boys. McKee and Leader (1955) found that middle- and lower-class pairs of nursery school boys were more competitive than pairs of female peers in a toy construction block game.

While studies of older children and adults also yield contradictory results, the general consensus is that females are more cooperative, and males more competitive in various experimental settings (Bardwick, 1971). Thus, there appears to be greater sex differences in cooperative behavior among older children and adults than among preschoolers. It is important, therefore, to investigate the age at which these sex differences begin to show up and to determine the role which the socialization process plays in this behavior change. The present study allows for an evaluation of the effects of peers and teachers as socializing agents on the development of sex differences in cooperation. Both lower- and middle-socioeconomic children were included in the study, so as to permit an investigation into social class differences in socialization practices and cooperation.

Cooperation is such a complex form of behavior that it is difficult to define it. As Cook and Stingle (1974) point out, dictionary and lay definitions of cooperation typically imply some degree of social intention and consciousness, while psychological definitions vary in their reference to intention. In the present study, Parten's (1932) definition of cooperation was used, since it could readily be applied in an observational setting: "the child plays in a group (comprised of two or more individuals) organized for the purpose of making some material product, or of striving to attain some competitive goal, or of dramatizing situations of adult and group life, or of playing formal games..."

Helping and sharing behaviors were also observed, since they are commonly seen as aspects of cooperation, and may be considered particularly important by teachers. For example, adults may stress the importance of children's learning the "responsibility" of sharing and helping others. As Barnes (1971) hypothesized, however, adults may not reinforce the type of behavior which Parten (1932) termed cooperative, i.e., the enjoyment of one's role as part of a group activity. Peer- and teacher-reinforcements of helping and sharing were also observed.

Helping and sharing are not necessarily cooperative behaviors, and knowledge of children's motivation would be required in order to rate their sharing or helping as cooperative. For example, a child might share a toy with another out of fear of the other child. In this case, sharing would be an example of compliance rather than cooperation. Since the study did not examine the motivation underlying overt behavior, helping and sharing were included as separate behaviors.

This study, in addition to providing a representative, ecologically valid sample of cooperative behaviors, also permits us to examine whether teachers make sex-typed distinctions among cooperation, helping, and sharing in their reinforcement of such behaviors, and whether peers do so as well. For example, girls may be reinforced more than boys for helping and sharing (behaviors that are consistent with the nurturant aspect of the feminine role) but not necessarily for cooperative play.

Behaviors Observed in the Study

Definitions of the behaviors follow in the next section, but first the behaviors are listed for easy reference on the next page as Table 65. They are grouped according to whether they would traditionally be considered as Aggression (Disjunctive Verbal/Physical, Conjunctive Assertiveness, Other), Dependency (Disjunctive, Productive, Other), or Cooperation (Cooperation, Helping, Sharing), when emitted by children. A small number of behaviors were included in a Miscellaneous category. Although these Miscellaneous behaviors were not considered to be sex-typed per se, they were found to be frequently associated with aggressive, dependent, or cooperative behaviors and were therefore included for later use in contingency analyses. The behaviors that were selected for inclusion met a number of criteria. They were (1) not overly broad, (2) traditionally considered to be sex typed; (3) age-appropriate, and (4) of theoretical interest. In addition, pilot work confirmed that they could be reliably observed.

Table 65

AGGRESSION

A. Constructive Assertiveness

Approves (T)
Asserts Self, Leads, States Wants (C)
Comforts Physically (T)
Comforts Verbally (T)
Directs Activity (T)
Encourages Child to do Task (T)
Encourages Child to Join Ongoing Activity
Encourages Child to Help (T)
Encourages Child to Share (T)
Encourages Turntaking (T)
Encourages Child to Portray the Feminine Role (T)
Encourages Child to Portray the Masculine Role (T)
Explains (T)
Gets Powerful Adult to Intervene (C)
Initiates Activity (T)
Initiates Group Activity (T)
Insists Apologize (T)
Insists Return Something (T)
Insist (Other)
Instructs (T)
Prohibits Physically (T)
Prohibits Verbally (T)
Reprimands Softly (T)
Reprimands Loudly (T)

B. Disjunctive Verbal Aggression

Calls Names (C)
Criticizes (C)
Threatens (C)
Yells At (C)

C. Disjunctive Physical Aggression

Grabs, Takes (C)
Hits, Kicks, Pushes (C)
Pulls Away From (C)

D. Other Aggression

Disobeys (C)
Fantasy Play, Male (C)
Ignores (T)

DEPENDENCY

A. Disjunctive Dependency

Clings (C)
Cries (C)
Seeks Attention Negatively (C)
Seeks Help for Something the Child Can Do (C)
Seeks Proximity (C)
Seeks Reassurance (C)

B. Productive Dependency

Asks Question (T)
Seeks Attention Positively (C)
Seeks Help for Something the Child Cannot Do (C)

C. Other Dependency

Complies (T)
Hugs, Touches (T)
Fantasy Play, Female (C)
Joins (C)
Obeys (C)

COOPERATION

Cooperation

Plays in Group to Make Something (C)
Plays in Group to Reach Competitive Goal (C)
Plays in Group to Dramatize Adult Life (C)
Plays in Group to Play Formal Game (C)

Helping

Helps at Another's Request (C)
Helps Spontaneously (C)
Encourages Child to Help (T)

Sharing

Shares at Another's Request (C)
Shares Spontaneously (C)
Encourages Child to Share (T)

MISCELLANEOUS BEHAVIORS

Accepts Something from Someone
Acknowledges
Allows
Answers
Frowns At
Listens
No Response
Plays
Smiles At
Talks To

In addition to classifying each of the behaviors in terms of the various subcategories, each behavior was also characterized as a 'Child' or a 'Teacher' behavior, designated in the table by (C), or (T), respectively. Child behaviors were most often, but not exclusively, emitted by children, and Teacher behaviors were usually, but not solely, shown by teachers. The teacher behaviors would not be considered to reflect aggression, dependency, or cooperation when used by teachers; they have been placed in the table in terms of their categorization when used by the children.

Behavior Definitions

Child Behaviors

Disjunctive Dependency

1. Cries: Cries, irrespective of strength or cause.
2. Seeks Attention, Negatively: Attempts to attract the regard of another in a socially inappropriate fashion; attempts to get another's attention in a disruptive manner (e.g., runs into middle of circle during storytime and starts screaming).
3. Seeks Help for Something the Child Can Do: Requests assistance in accomplishing a task the child could readily have done alone.
4. Clings, Seeks Physical Contact, Sits on lap: Physically or verbally indicates to another person that the child desires physical comforting by that person; holds onto for purposes of comfort.
5. Seeks Proximity: Moves self so as to get close to another person; no physical contact is involved.
6. Seeks Reassurance: Looks to another person (usually the teacher) for approval for what the child has done or for confirmation.

Productive Dependency

1. Seeks Attention, Positively: Attempts to get the attention of another person via socially approved methods; attempts to get attention in a nondisruptive manner (e.g., says, "excuse me").
2. Seeks Help for Something the Child Cannot Do: Requests assistance in accomplishing a task the child could not have done alone.

Other (Miscellaneous) Dependency

1. Fantasy Play, Female/Child: Pretends to be engaged in some activity or plays some role which is traditionally associated with being a child, usually in a family dramatization; assumes role of stereotyped woman or mother during fantasy play; dresses in female clothing (e.g., dress, hat, purse), or engages in traditional female behavior (cooks, sweeps).
2. Obeys: Does what is requested or demanded.
3. Joins: Enters into activity initiated by another.

Constructive Assertiveness

1. Asserts Self, Leads, States Wants: In a commanding way, the child leads or directs another or states wants to, or makes demands upon another; assumes position of leadership, setting course and tone of play.
2. Gets a Powerful Adult to Intervene: Solicits the aid of an adult in resolving a dispute with another person in her or his favor or otherwise forcing another child to comply with her or his desires; requests aid from an adult in handling a situation.

Disjunctive Verbal Aggression

1. Calls Names; Teases: Makes fun of others, laughs at others, attempts to provoke another through name-calling, offering and withdrawing a toy, etc.
2. Criticizes: Insults another person's work, behavior, etc.; makes negative remarks about (e.g.,) another's performance.
3. Threatens: Tells another that s/he will do another harm in the future if the child does not do something or stop doing something.
4. Yells At: Screams loudly at another.

Disjunctive Physical Aggression

1. Grabs, Takes: Seizes or attempts to seize something from someone.
2. Hits, Kicks, Pushes: Intentionally physically aggresses against another.
3. Pulls Away From: Protests physically at being held so as to escape.

Other (Miscellaneous Aggression)

1. Disobeys: Actively and deliberately behaves in a manner contrary to a directive or does not do what child has been told to do.
2. Fantasy Play, Male: Acts out or engages in some kind of activity which is traditionally viewed as masculine (e.g., Batman, father); dresses up in male manner (e.g., firehat).
3. Ignores: Actively fails to comply with a request of directive (e.g., continues in the activity the child has been told to stop); presumes the child has heard the directive. Differs from "No Response" in that Ignores is an active failure to do something and from "Disobey" in that Disobey entails additional behavior to the contrary of the directive.

Cooperation

1. Child Plays in Group To Make Something: Participates in an activity in order to create one cooperatively produced product.
2. Child Plays in Group to Attain a Competitive Goal: Plays in a game with others in which either one individual or a group of individuals wins, makes the best, finished first, etc.
3. Child Plays in Group to Dramatize Adult Life: Plays in organized game wherein adult roles are acted out.
4. Child Plays in Group to Play a Formal Game: Participates in play activities having formal rules.

Help

1. Helps at Another's Request: Assists another in response to someone's appeal to do so.

2. Helps Spontaneously: Assists another on one's own initiative, not because or after one has been requested to do so.

Share

1. Shares at Another's Request: Gives something to another child who has asked for that object, or permits another to use something that s/he has been using after the child has requested it.
2. Shares Spontaneously: On one's own initiative, offers an object to another child.

Teacher Behaviors

1. Approves, Praises: Verbally indicates that child has done something well; commends child.
2. Asks Question: Makes inquiry of child.
3. Comforts Physically: Consoles or otherwise holds, touches, pats, kisses, etc. child in response to some upset or pain on the child's part.
4. Comforts Verbally: Consoles or soothes child with calming or otherwise supportive words in response to some upset or pain on the child's part.
5. Complies: Teacher does something the child tells the teacher to do. Differs from Obey in terms of the power differential between teacher and child.
6. Directs Activity: Tells someone to do something and/or how to do it.
7. Encourages the Child to Join Ongoing Activity: Tries to get the child to join some activity which is already in progress, usually involves urging a child to join a group of children who are already engaged in making something or in playing a game, etc. No directive is involved.
8. Encourages the Child to do Task: Tries to motivate the child to do something; not in the form of a directive.
9. Encourages the Child to Act in Feminine Role: Either verbally or through action, tries to motivate the child to role play or engage in behavior that is traditionally considered to be feminine, or praises child when child does so.
10. Encourages the Child to Act in Masculine Role: Either verbally or through action, tries to motivate the child to role play or engage in behavior that is traditionally considered to be masculine, or praises child when child does so.
11. Encourages Helping: Suggests or urges (not Insist) that a child aid the teacher or another child.
12. Encourages Sharing: Suggests or urges (not Insist) that a child allow another child to use something or otherwise share with another child.
13. Encourages Turn Taking: Suggests or urges (not Insist) child do alternate turns with another child.
14. Explains: Makes something clear; gives reasons for something.
15. Frowns At: Facial expression indicating dissaproval.
16. Ignores: Actively fails to comply with or recognize a request, directive or other verbalization or behavior. Presumes the teacher has heard the directive. Differs from No Response in that Ignores is an active failure to do something.
17. Initiates Activity: Tells one or two children that some new activity is about to begin and gets things going.

18. Initiates Group Activity: Tells three or more children that some new activity is about to begin and get things going.
19. Insists the Child Apologize: Attempts strongly and repeatedly to compel a child to apologize for something.
20. Insists the Child Return Something: Attempts strongly and repeatedly to compel a child to give something back to another.
21. Insists (Other): Attempts strongly and repeatedly to compel another person to do something.
22. Instructs: Tells or shows another how to do a task.
23. Physically Touches, Hugs: Touches or hugs another person no comfort is involved.
24. Prohibits Physically: Physically prevents or stops child from doing something.
25. Prohibits Verbally: Verbally prevents or stops child from doing something.
26. Reprimands Loudly: Loudly verably disapproves of something that child has done so that other children can bear the scolding.
27. Reprimands Softly: Quietly verbally disapproves of something that a child has done in a voice which only the child being scolded or those very close to the child can hear.

Miscellaneous Behaviors

1. Accepts: In response to being offered something, the person takes it.
2. Acknowledges: Indicates nonverbally (e.g., by a glance) that one is aware of the fact that another has done something.
3. Allows: Permits, passively.
4. Answers, Responds to: Responds verbally to a question or statement.
5. Frowns At: Facial expression indicating disapproval.
6. Listens: Pays active attention to.
7. No Response: Unintentional passive failure to comply with a request or answer a question or otherwise respond when it may be appropriate but not mandatory to do so; lack of response when none is required.
8. Plays: Engages in activity with a toy or in a game.
9. Smiles At: Facial expression indicating approval.
10. Talks To: Engages in undefined verbal behavior with another.

Observation Materials

Meylan Time Study Board and Stop Watch

The Meylan Time Study Board (#230) with its clip on stopwatch holder was used along with Brenet stopwatches, which indicated both seconds and cumulative minutes.

Observation Record Form

Table 66 (at the end of this chapter) contains a sample observation

written on the record form, which permitted straightforward recording of observations. As explained in the Observation Procedure section which follows, the top part of the form was filled in after the observation was completed. In order to simplify coding, only one behavior was written on any single line of this record form.

Observers

During Year One, one male (a graduate student) and two females (one graduate student, one senior undergraduate) served as observers. During the second year, two males (one undergraduate senior, one graduate student) and two females (two graduate students) observed, and during the third year two female graduate students observed. All were between 21 and 26 years of age and all came equipped with strong psychology backgrounds. All had previously conducted observational studies as part of their course work.

During years one and two, a male and female observer alternately visited each class at intervals of approximately two weeks (except for classes in the new schools, which were seen twice during the year). Since no observational differences attributable to sex of observer were found for the first two years, two female observers alternated during the third year. No one observed for more than one year.[1]

Observer Training and Reliability

The observers were naive as to the specific objectives of the study during the time they served as observers. All observers were told that this was a study of socialization and normative play behavior of preschoolers. At no time was mention made of sex roles. Each observer was given a list of the behaviors that were to be observed in the study, along with the operational definitions of each. This list did not contain the heading "Aggression," "Dependency," or "Cooperation," nor were the behaviors grouped into these categories. The first author of this monograph then met with all of the observers for that particular year and went over each of the behaviors, explaining any lack of clarity which occurred. Instances of seeming overlap between categories were clarified.

The observers and Dr. Seegmiller then viewed preschoolers in their classrooms, informally discussing the occurrence of the predefined behaviors. This was expedited by visits to a nearby nursery school that was equipped with a one way mirror. This enabled us to talk about the various categories of behavior as they occurred. Additionally, the observers were instructed on how to systematically scan the room from left to right.

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[1]We would like to thank the following people for serving as observers: Michelle Adler, Amy Brams, Adrienne Burghausser, Richard Corman, Patricia Cronin, Charlene DiGrigoria, Kina Director, Richard Eichler, and Joseph O'Connor.

The next step in training was for the observers to record on the standard form what they were observing through the one way mirror. Observers looked for 45 seconds, wrote down what they had seen in the standard form, and then discussed their record. Reliability between observers was checked for each minute by counting the number of times they agreed that particular behaviors occurred and dividing this by the number of times they agreed and the number of times they disagreed. This was multipled by 100 to yield a percentage. Reliability (Observer agreement) was computed between all possible pairs of observers and between each observer and Dr. Seegmiller (see Frick and Semmel, 1978, for a current discussion of observer agreement). We continued to observe for a minute at a time until agreements on five consecutive minutes (with interspersions of discussion between each) reached 90%. Thus, the formula used to compute the reliability of the observations for a particular minute was

$$(1)\quad \text{Minute Reliability} = \frac{\#\text{ of agreements}}{\#\text{ of agreements} + \#\text{ of disagreements}} \times 100$$

Next, observing for consecutive minutes was begun, without discussions between each minute. Rather discussions took place after each ten minutes of recording. The start and end of each observing minute was synchronized. This was continued until the mean reliability for 10 consecutive minutes averaged 85% or better, as determined by formula (1).

Finally, the same procedure was used, but for a thirty minute period. Again, this was continued until the mean observer agreement reached 85% or better as determined by formula (1).

We also determined the reliability for each category of behavior by

$$(2)\quad \text{Category Reliability} = \frac{\#\text{ of occurrences in both records}}{\#\text{ of occurrences} + \#\text{ of nonoccurrences}} \times 100$$

As with the minute by minute reliability, 85% agreement over the thirty minute observation period was attained.

Reliability was assessed at monthly intervals during the study so as to assure that observers maintained common definitions and observational procedures.

Approximately one and a half months were spent in observer training. A great deal of time was spent establishing and maintaining high levels of reliability because it is "critical for clear interpretation of experimental data" (Romanczyk, Kent, Diament, O'Leary, 1973, p. 175). These authors found reliability differences during assessments conducted when observers were aware and unaware that reliability was being monitored. It was not possible to conduct covert assessments in the present study, since only one observer visited any particular classroom for a given observation.

Observation Procedures

Each school was called a few days before each observation to check on the suitability of the scheduled observation day, and also to minimize unnecessary trips to the school by the observers.

Upon arrival in the classroom, the observer's first task was to record which teachers and children were present. However, given the large number of children who were included in the study (e.g., over 500 during the first year), and the fact that the observers were rotated (by sex) between classrooms for consecutive observations, it was neither feasible, reasonable, nor necessary for the observers to learn the names of the children. It would, of course, have been possible to have had each child wear an identifying number. However, an alternate method was devised which was less intrusive: The observer chose what for her or him was the child's most salient characteristic during that particular observation to use as a mnemonic in recording. Most often these characteristics pertained to hairstyle (e.g., "braids") or clothing (e.g., "Big Bird Shirt"). The observer listed these characteristics on a sheet of scratch paper and used them throughout the observation. (Of course, if a child's name was known to the observer, s/he would use the name.) During the observation, some of the names of the children would become evident to the observer, as children or teachers called to each other. After completing the observation, the observer would record names that s/he had learned next to the mnemonic and would then check the list of mnemonics and names with one of the teachers, who would also provide any unknowns. This method only took a few minutes of the teachers time. Yet, in a sense, it provided the teachers with a feeling of contributing to the study. Thus, it helped to maintain rapport and to keep the teachers at ease about the observers being in the room. It also gave us the opportunity to keep our class list up to date and to gain the invaluable assistance of the teachers.

The observational method combined aspects of both time and event sampling techniques: The observer scanned the room for 45 seconds for occurrences of pre-specified behaviors. The next 15-30 seconds were used to record the following information on the Observation Record Form (see Table 66):

1. The Minute number

2. The Number of male and number of female children engaged in the activity

3. The Activity

For each observation unit, the observer recorded the toy the actors were playing with or the activity they were engaged in. These were later categorized for coding purposes as follows:

Aggression (e.g., fighting)
Animals
Books (Not storytime)
Clean up
Cognitive Activities (e.g., spelling, counting, alphabet)
Collecting materials
Dressing (Non fantasy)
Eating (e.g., lunch, snack)
Fantasy Play: Male
Fantasy Play: Female
Fantasy Play: Non sex specific (e.g., Puppets)
Food Preparation
Free Play
Going Somewhere
Group Activity: Circle (e.g., singing, storytime)

Group Activity: Table (e.g., parties, roll call, blessing)
Holiday Activities (e.g., making Christmas decorations)
Hygiene (e.g., bathroom, grooming, washing)
Injuries
Large Muscle Activity (e.g., climbing, running, crawling, jumping)
Learning Activities: Miscellaneous (e.g., telling time)
Manners
Materials: Miscellaneous (e.g., tacks)
Naptime
Noise Making (e.g., hollering, banging)
Sitting
Social Interaction: No toy involved
Social Interaction: During Physical Activity (e.g., tickling, fooling around)
Table Games: Arts and Crafts
Table Games: Cognitive (e.g., puzzles)
Talking: Individual
Talking: Group
Toys: Male[2] (e.g., guns)
Toys: Female[2] (e.g., dolls)
Water Play

4. The Observation Unit

The Observation Unit consists of the following parts:

a. The Initiation

(1) Actor(s): Who initiated the behavior.
(2) Initiating Behavior(s): What the behavior was.
(3) Target(s): Who the Initiating Behavior was directed at.

b. The Response

(1) Responder(s): Who (frequently, though not necessarily, the target person) responded to the Initiating Behavior.
(2) The Response Behavior(s): The behavior of the Responder.
(3) Response Object(s): Who the Response was directed at (frequently, but not necessarily the Actor).

Since the Initiations and Responses could involve singular or multiple people and/or actions, the observation units could take many forms. Some of the most frequent were as follows (where "S" means subject):

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[2]A list of toys was given to five adult males and five adult females who were asked to indicate whether they thought more boys or more girls would play with the toy. Agreement between at least 80% of the adults led to the toy being classified as male or female. Other toys were classified as "non sex specific."

Observation Unit #	The Initiation	The Response
1	S_a Act_i	
2	S_a Act_i	S_r $Act_j \longrightarrow S_a$
3	S_a $Act_i \longrightarrow S_r$	S_r $Act_j \longrightarrow S_a$
4	S_a $Act_i \longrightarrow S_r$	S_s $Act_j \longrightarrow S_a$
5	$S_a + S_b$ $Act_i \longrightarrow S_r$	S_r $Act_j \longrightarrow S_a + S_b$
6	$S_a + S_b$ $Act_i \longrightarrow S_r$	S_r $Act_j \longrightarrow S_b$
7	$S_a + S_b$ $Act_i \longrightarrow S_r + S_s$	$S_r + S_s$ $Act_j \longrightarrow S_a + S_b$
8	S_a $Act_i \longrightarrow S_r + S_s$	S_s $Act_j \longrightarrow S_a$
9	S_a $Act_i \longrightarrow S_r + S_s$	$S_r + S_s$ $Act_j + Act_k \longrightarrow S_a$
10	S_a $Act_i + Act_j \longrightarrow S_r$	S_r $Act_i + Act_j \longrightarrow S_a$
11	$S_a + S_b$ $Act_i + Act_j \longrightarrow S_r$	S_r $Act_i + Act_j \longrightarrow S_a + S_b$
12	$S_a + S_b$ $Act_i + Act_j \longrightarrow S_r$	S_r $Act_i \longrightarrow S_a + S_b$
13	$S_a + S_b$ $Act_i + Act_j \longrightarrow S_r + S_s$	$S_r + S_s$ $Act_i + Act_j \longrightarrow S_a + S_b$

Frequently, one Initiating Action set off a sequence of Responses, all of which were noted as Responses, with each line of the following compricing an Observation Unit. For example,

Observation Unit #	The Initiation	The Response
14	S_a Hits $\longrightarrow S_r$	S_r Hits $\longrightarrow S_a$
		S_a Yells at $\longrightarrow S_r$
		S_r Hits $\longrightarrow S_a$
		S_a Cries

The observer focussed on the children as initiators until s/he had thirty minutes of <u>recorded</u> observation. Then, the observer focussed on the teachers as initiators for another thirty minutes of <u>recorded</u> observation. Focussing on the children or the teachers as initiators means that the observer paid special attention to the observation units initiated by the children or the teachers, respectively; however, this does not mean that this held true in <u>every</u> case. For example, if, while focussing on the children as initiators, a child responded with one of the preselected be-

haviors to a known initiation by the teacher, then the teacher would have been recorded as the actor of the Initiation with the child as the Target.

All of the observations were done indoors, and any behavior occurring in or overlapping more than one minute, was listed for each minute in which it appeared.

Sometimes a child directed a target behavior at the observer. When this happened, the observer noted the behavior as a usual occurrence. An acknowledgement, but no encouragement was given to the child in response.

Upon returning to the office, the observers would completely fill in the top part of the Observation Record Form. Thus, they would fill in the date, observation number, their initials, school, class, year of study, the names and subject numbers of all teachers and children. They would check the pages for numbering and for the indication of whether the 30 minutes was on the teachers or the children. Additionally, using their list of mnemonics and children present at the observation, they would go through the observation, line by line, substituting the corresponding child's identification number for each mnemonic used. The observer then checked off on a master class list, all of the teachers and children who were present for that observation. Finally, each observation was placed in a separate folder, labeled with the school, class, observation number, date, and observer's initials. Coding, and then checking, for computer analysis followed.

Observation Tables

Following Table 66 containing the sample observation, Tables 67, 70 and 73 show the mean number of days between observations for each class, for Years One, Two, and Three, respectively. The mean number of observations that children in each class were present for are shown in Tables 68, 71, and 74, for the three years. Tables 69, 72, and 75 give the number of male and female subjects in each class that were present for each of the 13 Year One, 8 Year Two, and 8 Year Three Observations. For Years Two and Three, children who were followed into new schools were each observed twice, as is shown in the above tables.

T1 = Ms Fluff (802)
T2 = Ms Puff (803)

SAMPLE OBSERVATION

HUNTER COLLEGE OF THE CITY UNIVERSITY OF NEW YORK
Department of Psychology
Dr. B. Seegmiller

15 days since last ob

CLASS 3's 95
SCHOOL HARVARD TT
DATE FEB. 2, 1983
YEAR (#1) 2 3
OBSERVATION # 5

OBSERVER BW 9 PAGE 1 OF 2C
CHILDREN PRESENT (list sexes & names):

♂ Bud (001)
Allan (002)
Pete (003)
Sean (004)
IAN (005)

♀ Nancy (010)
Carolyn (011)
KALA (012)
TAUNA (013)
JOANN (014)

	Minute #	# Present M	# Present F	Activity	Actor & Behavior	Responder & response
E	1	3	2	Blocks 05	Bud Te → Sean	Sean hits → Bud /
E				Blocks 05	Tauna + Joann Te →	
				25	Ian	Ian Te → Tauna & JOANN /
E	2	5	5	Prepare for snack	Nancy PRX → T1 & T2	T1 & T2 Allow → NANCY /
E					Bud & Pete Help	T1 & T2 Praise →
E					Sean → T1 & T2	Bud & Pete /
E	3	5	5	" 35	Kala	
					Cling → T1 & T2	T2 Rep Soft → Kala + TAUNA
E	4	"	"	Set Table 35	NANCY + Carolyn Help	
					Sean → T1 & T2	T1 Praises Nancy + Carolyn /
E	5	"	"	" 35	Bud + Pete hit →	Ian hits → Bud /
					Ian	Ian Te → Pete /
E	6				Allan hits + yells at → Ian	Ian hits + yells at → Allen /
E	7				Bud hits	Sean hits
					+ yells at → Sean	& yells at → Bud /
E	8				Tauna hits →	Ian hits →
					yells at → Ian	yells at → Tauna /
E	9				Joann Te →	Nancy Te →
					Takes → Nancy	yells at → Joann /
E	10			Eating 30	Tauna yells at	T1 Rep Soft →
					cries → T1	Explains → Tauna /

Table 66 (cont)

HUNTER COLLEGE OF THE CITY UNIVERSITY OF NEW YORK
Department of Psychology

Dr. B. Seegmiller

CLASS 3's OBSERVER _____ PAGE 2 OF 2C
SCHOOL Harvard CHILDREN PRESENT (list sexes & names): _____
DATE _____
YEAR # 1 2 3
OBSERVATION # 5

(see p 30)

	Minute #	# Present M	# Present F	Activity	Actor & Behavior	Responder & response
E	11	5	5	Eating 33	Bud Sh Spon → Pete	Pete Sh Spon → Bud /
E					Bud Grabs → Kala	Pete Te → Jan /
E	12	3	3	Clean Up 02	Kala hits Jauna	Jauna hits → Kala /
E					Kala yells at → Bud	Jauna yells at → Bud /
E					Joann cries /	
E	13				Joann hits → Bud	Bud cries /
E	14				Jauna Hk to → Bud /	
	15				Jauna Hk to → Bud	Bud No Resp → Jauna /
E	16				Jauna Hk to → Bud	Bud No Resp /
E	17				Jauna hits → Joann	Bud smiles → Jauna /
E	18	2	4	Circle Time 21	Bud Teases → Pete	Pete Teases → Bud /
						Bud yells at → Pete /
						Pete seek adult → T1 /
						T1 Rep L → Bud /
						Bud obey → T1 /
E	19	2	4			
E	20	1	2	Kitchen 11	Joann ♀ taut	T1 Praises → Joann /
					T1 enc ♀ taut → Joann	Joann smiles → T1 /
E	21	2	0	Monitors 8	Bud Hk to → 0	0 ack. → Bud /
	22	3	2		2♂ 2♀ Prz → T1 & 0	T1 & 0 allow → 3♂ 2♀ /
	23	5	5		T1 cries /	

T1 = Mrs Fluff (802)
T2 = Ms Puff (803)

Table 66 (cont)

HUNTER COLLEGE OF THE CITY UNIVERSITY OF NEW YORK
Department of Psychology

Dr. B. Seegmiller

CLASS 3's
SCHOOL HARVARD
DATE FEB 2 1983
YEAR # (1) 2 3
OBSERVATION # 5

OBSERVER BW PAGE 1 OF 2T

CHILDREN PRESENT (list sexes & names):

♂ Bud (001)
Allan (002)
Pete (003)
Sean (004)
Jan (005)

♀ Nancy (010)
Carolyn (011)
Kate (012)
TAUNA (013)
Joanna (014)

misc) = E ↓

	Minute #	# Present M	# Present F	Activity	Actor & Behavior	Responder & response
E	1	5	5	Prepare outside	T1 directs → Bud, Allan	Bud, Allan obey → T1 /
E	2	5	5		T1 hugs → Bud	Bud smiles → T1 /
						Bud Prx → T1 /
						T1 allows → Bud /
E	3	5	5			
E	4	5	5	Story	T1 initiates → Grp	Grp obey → T1 /
E	5				T1 talks to	
					ask ? → Grp	Jauna answers → T1 /
						T1 Praises → Jauna /
E	6				T1 explains → Grp /	
E	7				T1 instructs → Grp	Grp No Resp /
E	8				T1 initiates O.I → Pete	Pete obey → T1 /
						T1 Praises
						Smiles at → Pete /
						Pete smiles at
						hugs → T1 /
E	9				Bud cries	T2 comf V
						comf P → Bud /
E	10	3	1	Puppets	Pete Acc. → Jauna	T1 explains
						enc. C →
						talks to → Pete /
	11					Pete obeys → T1 /

Table 6.6 (Cont.)

HUNTER COLLEGE OF THE CITY UNIVERSITY OF NEW YORK
Department of Psychology

Dr. B. Seegmiller

CLASS 3's OBSERVER _____ PAGE 1 OF 2 T
SCHOOL Harvard CHILDREN PRESENT (list sexes & names): _____
DATE _____
YEAR # 1 2 3
OBSERVATION # 5

(Disc 3's)

	Minute #	# Present M	# Present F	Activity	Actor & Behavior	Responder & response
	11 (cont)	3	1	Puppets		T1 Praises → Pete /
	12					Pete smile → T1 /
E	13	4	4		T1 enc ♂ → Bud, Pete, Ian → 3	Obey → T1 /
E	14				T1 enc ♀ → Tauna, Kala, Joanie → 3	Obey → T1 /
E	15				Kala ♀	T1 praise → Kala /
E					Tauna ♀	T1 Praises → Tauna /
E					Bud ♂	T1 praise → Bud /
E					Pete ♂	T1 praise → Pete /
E	16	2	1	CLAY	Ian, Nancy Allan CH PLG/TMS	T1 encourages → Ian, Nancy Allan /
						Nancy obeys → T1 /
						Ian, Allan disobey → T1 /
						T1 Rep S → Ian, Allan /
						T1 Praises → Nancy /
						Ian, Allan Obey → T1 /
						T1 Smiles → Ian /
S	17	5	5	fighting	T1 Proh. P	Bud cries +
					Proh V → Bud	hits → T1 /
E	18				T2 insist apologize → Ian	Ian disobey → T2 /
	19					T1 Rep. L. → Ian /
E	20	4	4	Clay	T1 Proh V → 4♂ 3♀	4♂, 3♀ disobey → T1 /

141

Table 67

First Year Observation Sample: Mean Number of Days Between Observations, By Class

School	Class	Mean No. of Days	School	Class	Mean No. of Days
01	01	13.50	07	16	14.58
01	02	15.92	07	17	13.83
01	03	15.42	08	18	13.25
02	04	15.00	09	19	15.08
02	05	14.50	09	20	15.92
02	06	13.25	10	21	13.83
02	07	15.33	10	22	13.33
02	08	15.50	10	23	15.25
02	09	15.00	11	24	17.67
02	10	15.17	12	25	15.67
03	11	15.16	12	26	15.67
03	12	15.08	12	27	16.00

Table 68

First Year Observation Sample: Mean Number of Observations Children Were Present for, by School, Class and Sex

School	Class	Mean No. for Females	No. of Females	Mean No. for Males	No. of Males	Total Mean	Total Number
01	01	10.88	9	10.75	8	10.82	17
01	02	11.00	8	10.22	9	10.58	17
01	03	11.30	10	11.33	9	11.31	19
07	16	7.00	8	3.76	13	5.00	21
07	17	4.84	13	6.68	16	5.86	29
08	18	8.46	13	5.18	11	6.95	24
09	19	7.44	9	10.50	8	8.88	17
09	20	7.88	9	9.92	13	9.09	22
10	21	6.12	8	6.30	10	6.22	18
10	22	6.06	15	9.80	10	7.56	25
10	23	7.61	13	7.46	13	7.53	26
11	24	7.16	12	8.70	17	8.06	29
12	25	6.23	13	6.30	13	6.26	26
12	26	6.33	15	9.90	11	7.84	26
12	27	10.05	18	10.75	8	10.26	26
02	04	9.40	10	8.57	7	9.05	17
02	06	10.55	9	9.11	9	9.83	18
02	05	10.75	8	8.58	12	9.45	20
02	07	9.71	7	8.78	14	9.09	21
02	08	9.90	11	10.55	9	10.20	20
02	10	11.50	8	12.00	5	11.69	13
02	09	10.38	13	10.38	13	10.38	26
03	11	10.66	6	8.70	10	9.43	16
03	12	9.00	5	10.07	14	9.78	19
	Total	8.76	250	8.93	262	8.80	512

Table 69

First Year Observation Sample: Number of Male and Female Subjects in Each Class Present at Each Observation

School I.D.	Class I.D.	Observation Number 1			2			3			4			5			6			7		
		M	F	Tot	M	F	Tot	M	F	Tot	M	F	Tot	M	F	Tot	M	F	Tot	M	F	Tot
01	01	6	8	14	8	9	17	7	8	15	5	9	14	8	7	15	5	5	10	8	8	16
01	02	7	7	14	5	6	11	7	6	13	8	7	15	7	7	14	9	7	16	4	8	12
01	03	9	10	19	7	10	17	7	7	14	6	7	13	9	8	17	7	9	16	8	9	17
02	04	5	8	13	5	6	11	3	6	9	4	6	10	5	7	12	5	5	10	4	8	12
02	05	10	7	17	7	7	14	8	5	13	9	7	16	9	7	16	7	6	13	8	6	14
02	06	8	9	17	6	8	14	5	7	12	7	8	15	4	5	9	8	6	14	5	9	14
02	07	9	5	14	10	6	16	8	4	12	13	5	18	9	5	14	9	6	15	11	3	14
02	08	7	8	15	9	9	18	6	8	14	8	10	18	8	8	16	7	9	16	8	7	15
02	09	10	12	22	13	11	24	9	10	19	10	10	20	11	12	23	11	9	20	12	9	21
02	10	5	8	13	3	8	11	5	6	11	4	6	10	5	8	13	4	5	9	5	8	13
03	11	5	4	9	7	6	13	7	6	13	5	5	10	7	5	12	4	4	8	7	4	11
03	12	12	4	16	12	4	16	11	3	14	9	4	13	10	3	13	12	3	15	9	3	12
07	16	1	5	6	2	5	7	1	5	6	1	4	5	2	3	5	3	5	8	2	4	6
07	17	7	3	10	8	2	10	10	4	14	7	6	13	10	6	16	10	5	15	5	4	9

Table 69 (cont.)

First Year Observation Sample: Number of Male and Female Subjects in Each Class Present at Each Observation

School I.D.	Class I.D.	Observation Number 8 M	8 F	8 Tot	9 M	9 F	9 Tot	10 M	10 F	10 Tot	11 M	11 F	11 Tot	12 M	12 F	12 Tot	13 M	13 F	13 Tot	Mean M	Mean F	Mean Total
01	01	6	6	12	7	9	16	6	8	14	6	6	12	7	7	14	7	8	15	6.61	7.53	14.15
01	02	8	6	14	8	7	15	8	8	16	8	6	14	6	7	13	7	7	14	7.07	6.84	13.91
01	03	9	10	19	5	9	14	9	10	19	8	7	15	8	9	17	7	9	16	7.61	8.76	16.37
02	04	3	8	11	3	8	11	4	8	12	4	6	10	4	9	13	4	7	11	4.07	7.07	11.14
02	05	7	6	13	7	6	13	8	7	15	6	7	13	8	7	15	9	7	15	7.92	6.53	14.45
02	06	7	7	14	7	7	14	5	5	10	5	6	11	7	8	15	8	8	16	6.30	5.53	11.83
02	07	10	5	15	8	4	12	7	7	14	7	5	12	10	6	16	12	6	18	9.46	6.46	15.92
02	08	7	7	14	7	9	16	8	9	17	7	8	15	7	8	15	7	8	15	7.38	8.30	15.68
02	09	10	10	20	12	11	23	12	11	23	6	6	12	7	9	16	12	12	24	10.38	10.15	20.53
02	10	5	7	12	5	8	13	5	7	12	5	5	10	4	7	11	5	7	12	4.61	6.92	10.53
03	11	2	5	7	8	5	13	9	4	13	9	5	14	6	5	11	5	5	10	6.23	4.84	11.07
03	12	8	3	11	13	3	16	11	4	15	11	4	15	12	3	15	10	3	13	10.76	3.38	14.14
07	16	5	3	8	6	5	11	7	6	13	6	3	9	4	5	9	8	3	11	3.69	4.30	7.99
07	17	9	4	13	9	3	12	8	4	12	9	6	15	5	7	12	8	9	17	8.07	4.84	12.91

Table 69 (cont.)

First Year Observation Sample: Number of Male and Female Subjects in Each Class Present at Each Observation

School I.D.	Class I.D.	Observation Number 1			2			3			4			5			6			7		
		M	F	Tot	M	F	Tot	M	F	Tot	M	F	Tot	M	F	Tot	M	F	Tot	M	F	Tot
08	18	6	10	16	6	9	15	5	7	12	3	6	9	5	5	10	1	7	8	3	10	13
09	19	6	6	12	4	7	11	6	5	11	7	7	14	7	5	12	7	7	14	4	3	7
09	20	12	4	16	10	4	14	10	6	16	12	5	17	12	6	18	9	7	16	7	5	12
10	21	3	4	7	5	4	9	5	4	9	5	4	9	3	5	8	2	5	7	5	5	10
10	22	6	7	13	5	7	12	6	6	12	7	8	15	6	8	14	7	6	13	9	4	13
10	23	5	8	13	8	8	16	9	6	15	8	8	16	8	7	15	6	9	15	9	5	14
11	24	13	8	21	8	4	12	13	6	19	9	5	14	10	5	15	8	5	13	11	6	17
12	25	7	5	12	7	6	13	8	7	15	7	7	14	6	6	12	6	6	12	4	4	8
12	26	7	9	16	7	6	13	9	9	18	4	3	7	8	7	15	10	10	20	6	5	11
12	27	6	13	19	8	14	22	8	15	23	7	12	19	6	11	17	8	13	21	3	8	11
	Mean	7.1	7.1	14.3	7.0	6.9	14.0	7.2	6.5	13.7	6.8	6.6	13.4	7.2	6.5	13.7	6.8	6.6	13.4	6.5	6.0	12.5

Note: M signifies Male; F, Female

Table 69 (cont.)

First Year Observation Sample: Number of Male and Female Subjects in Each Class Present at Each Observation

School	Class	Observation Number 8			9			10			11			12			13			Mean		
I.D.	I.D.	M	F	Tot	M	F	Tot	M	F	Tot	M	F	Tot	M	F	Tot	M	F	Tot	M	F	Total
08	18	4	10	14	4	11	15	4	8	12	4	11	15	5	9	14	7	7	14	4.38	8.00	12.38
09	19	7	6	13	7	4	11	7	7	14	8	4	12	6	2	8	8	5	13	6.46	5.23	11.49
09	20	12	6	18	7	6	13	8	4	12	8	7	15	12	4	16	8	7	15	9.76	5.46	15.22
10	21	7	4	11	5	3	8	7	4	11	5	3	8	6	2	8	4	2	6	4.76	3.76	8.52
10	22	9	8	17	8	6	14	7	6	13	9	7	16	9	10	19	8	6	14	7.38	6.84	14.22
10	23	7	10	17	7	6	13	8	9	17	8	8	16	3	5	8	9	8	17	7.30	7.46	14.76
11	24	9	7	16	12	5	17	14	9	23	14	8	22	11	6	17	14	9	23	11.23	6.38	17.51
12	25	6	6	12	5	8	13	7	8	15	6	7	13	5	5	10	6	6	12	6.15	6.23	12.38
12	26	10	7	17	10	7	17	10	9	19	10	9	19	9	9	18	8	8	16	8.23	7.53	15.76
12	27	8	16	24	7	14	21	8	17	25	7	15	22	5	12	17	5	17	22	6.61	13.61	20.22
	Mean	7.2	6.9	14.1	7.3	6.8	14.1	7.7	7.4	15.1	7.3	6.6	13.9	6.9	6.7	13.6	7.7	7.9	15.6	7.19	6.84	14.03

Table 70

Second Year Observation Sample: Mean Number of Days Between Observations, By Class

School	Class	Mean No. of Days	School	Class	Mean No. of Days
01	28	23.14	12	48	23.14
01	29	22.57	13	49	98.00
02	30	21.29	13	50	98.00
02	31	21.43	14	51	98.00
02	32	21.29	15	52	98.00
02	33	21.14	16	53	98.00
03	34	22.57	17	54	98.00
03	35	23.86	18	55	98.00
07	37	21.57	19	56	98.00
07	38	22.43	20	57	98.00
08	39	98.00	21	58	98.00
08	40	21.00	23	60	98.00
09	41	98.00	23	61	98.00
09	42	23.86	24	62	98.00
09	43	21.43	25	63	98.00
10	44	26.14	26	64	98.00
10	45	24.14	27	65	98.00
12	46	24.71	28	66	17.00
12	47	23.00	28	67	98.00

Note: The mean number of days between observations for classes that were observed only twice is given as "98." (See text.)

Table 71

Second Year Observation Sample: Mean Number of Observations Children Were Present for, by School, Class and Sex

School	Class	Mean No. for Females	No. of Females	Mean No. for Males	No. of Males	Total Mean	Total Number
01	28	7.33	6	7.80	5	7.54	11
01	29	7.20	5	7.16	6	7.18	11
07	36	0.00	2	0.33	3	0.20	5
07	37	3.57	7	4.55	9	4.12	16
07	38	4.09	11	5.45	11	4.77	22
08	39	1.00	1	2.00	1	1.50	2
08	40	6.33	9	6.80	5	6.50	14
09	41	0.00	0	2.00	1	2.00	1
09	42	4.16	6	7.00	6	5.58	12
09	43	6.25	4	6.60	10	6.50	14
10	44	3.40	5	5.40	5	4.40	10
10	45	4.70	10	6.42	7	5.41	17
12	46	5.50	2	8.00	1	6.33	3
12	47	5.71	7	7.16	6	6.38	13
12	48	6.85	7	7.54	11	7.27	18
02	32	7.75	4	7.50	2	7.66	6
02	33	5.80	10	5.83	6	5.81	16
02	31	7.25	8	7.14	7	7.20	15
02	30	6.28	7	6.30	10	6.29	17
03	34	0.00	0	7.00	4	7.00	4
03	35	8.00	1	7.25	4	7.40	5
	Total	5.32	112	5.96	120	5.57	232

Table 72

Second Year Observation Sample: Number of Male and Female Subjects in Each Class Present at Each Observation

School I.D.	Class I.D.	Observation Number 1			2			3			4			5		
		M	F	Tot	M	F	Tot	M	F	Tot	M	F	Tot	M	F	Tot
01	28	5	6	11	5	5	10	5	6	11	5	5	10	4	4	8
01	29	5	5	10	5	5	10	5	4	9	5	4	9	6	5	11
02	30	9	7	16	9	6	15	8	7	15	7	2	9	8	5	13
02	31	6	6	12	7	8	15	7	8	15	5	8	13	6	8	14
02	32	2	4	6	2	4	6	2	4	6	2	4	6	1	4	5
02	33	3	9	12	5	7	12	5	10	15	1	5	6	4	5	9
03	34	4	0	4	3	0	3	2	0	2	2	0	2	4	0	4
03	35	4	1	5	2	1	3	4	1	5	4	1	5	4	1	5
07	36	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
07	37	5	6	11	6	7	13	5	4	9	5	2	7	7	2	9
07	38	7	5	12	6	4	10	9	6	15	8	8	16	7	7	14

Table 72 (cont.)

Second Year Observation Sample: Number of Male and Female Subjects in Each Class Present at Each Observation

School I.D.	Class I.D.	Observation Number 6			7			8			Mean		
		M	F	Tot	M	F	Tot	M	F	Tot	M	F	Total
01	28	5	6	11	5	6	11	5	6	11	4.8	5.5	10.3
01	29	6	5	11	6	4	10	6	4	10	5.5	4.5	10.0
02	30	8	7	15	7	4	11	8	6	14	8.0	5.7	13.7
02	31	6	7	13	6	6	12	7	7	14	6.2	7.2	13.4
02	32	2	4	6	2	4	6	2	3	5	1.8	3.9	5.7
02	33	5	10	15	5	9	14	5	5	10	3.7	7.5	11.2
03	34	4	0	4	2	0	2	3	0	3	3.0	0.0	3.0
03	35	4	1	5	4	1	5	3	1	4	3.6	1.0	4.6
07	36	0	0	0	0	0	0	0	0	0	0.1	0.0	0.1
07	37	4	1	5	6	2	8	3	1	4	5.1	3.1	8.2
07	38	6	5	11	8	6	14	8	3	11	7.3	5.5	12.8

Table 72 (cont.)

Second Year Observation Sample: Number of Male and Female Subjects in Each Class Present at Each Observation

School I.D.	Class I.D.	Observation Number 1			2			3			4			5		
		M	F	Tot	M	F	Tot	M	F	Tot	M	F	Tot	M	F	Tot
08	39	1	1	2	1	0	1	0	0	0	0	0	0	0	0	0
08	40	4	8	12	4	8	12	4	7	11	4	8	12	4	6	10
09	41	1	0	1	1	0	1	0	0	0	0	0	0	0	0	0
09	42	5	2	7	6	4	10	5	2	7	4	3	7	6	4	10
09	43	9	2	11	10	4	14	11	4	15	9	4	13	9	2	11
10	44	4	2	6	4	1	5	4	2	6	4	3	7	3	2	5
10	45	6	7	13	6	6	12	6	7	13	6	4	10	7	6	13
12	46	1	2	3	1	2	3	1	2	3	1	1	2	1	1	2
12	47	5	6	11	5	5	10	5	6	11	6	4	10	6	5	11
12	48	11	5	16	11	6	17	10	7	17	10	7	17	10	5	15
	Mean	4.6	4.0	8.6	4.7	3.9	8.6	4.6	4.1	8.7	4.1	3.5	7.6	4.6	3.9	8.5

Note: M signifies Male; F, Female

Table 72 (cont.)

Second Year Observation Sample: Number of Male and Female Subjects in Each Class Present at Each Observation

School I.D.	Class I.D.	Observation Number 6 M	6 F	6 Tot	7 M	7 F	7 Tot	8 M	8 F	8 Tot	Mean M	Mean F	Mean Total
08	39	0	0	0	0	0	0	0	0	0	0.2	0.1	0.3
08	40	4	6	10	5	7	12	5	6	11	4.2	6.2	10.4
09	41	0	0	0	0	0	0	0	0	0	0.2	0.0	0.2
09	42	6	3	9	6	5	11	4	2	6	5.2	3.1	8.3
09	43	11	4	15	9	4	13	7	2	9	9.3	3.2	12.5
10	44	3	2	5	3	3	6	2	2	4	2.8	2.1	4.9
10	45	7	7	14	6	5	11	3	5	8	5.8	5.8	11.6
12	46	1	1	2	1	1	2	1	1	2	1.0	1.3	2.3
12	47	5	5	10	6	4	10	5	4	9	5.3	4.8	10.1
12	48	11	5	16	11	7	18	9	6	15	10.4	6.0	16.4
	Mean	4.6	3.7	8.3	4.6	3.8	8.4	4.0	3.0	7.0	4.5	3.6	8.1

Table 72 (cont.)

Second Year Observation Sample (New Schools): Number of Male and Female Subjects in Each Class Present at Each Observation

School	Class	Observation Number 1			2			Mean		
I.D.	I.D.	M	F	Total	M	F	Total	M	F	Total
13	49	0	1	1	0	1	1	0.0	1.0	1.0
13	50	0	1	1	0	1	1	0.0	1.0	1.0
14	51	0	1	1	0	1	1	0.0	1.0	1.0
15	52	1	0	1	1	0	1	1.0	0.0	1.0
16	53	0	1	1	0	1	1	0.0	1.0	1.0
17	54	1	0	1	1	0	1	1.0	0.0	1.0
18	55	1	0	1	1	0	1	1.0	0.0	1.0
19	56	0	1	1	0	0	0	0.0	0.5	0.5
20	57	0	1	1	0	1	1	0.0	1.0	1.0
21	58	0	1	1	0	1	1	0.0	1.0	1.0
23	60	1	0	1	1	0	1	1.0	0.0	1.0
23	61	1	0	1	1	0	1	1.0	0.0	1.0
24	62	0	0	0	0	0	0	0.0	0.0	0.0
25	63	0	1	1	0	1	1	0.0	1.0	1.0
26	64	1	0	1	1	0	1	1.0	0.0	1.0
27	65	0	1	1	0	1	1	0.0	1.0	1.0
28	66	0	1	1	0	1	1	0.0	1.0	1.0
28	67	1	0	1	1	0	1	1.0	0.0	1.0
	Total	7	10	17	7	9	16			
	Mean	0.4	0.6	0.9	0.4	0.5	0.9	0.4	0.5	1.0

Note: M Signifies Male; F, Female

Table 73

Third Year Observation Sample: Mean Number of Days Between Observations, By Class

School	Class	Mean No. of Days	School	Class	Mean No. of Days
01	69	19.43	30	82	98.00
02	70	24.00	32	84	98.00
03	71	20.28	33	85	98.00
03	72	19.00	34	86	98.00
07	73	30.00	16	87	98.00
07	74	23.00	35	88	98.00
08	75	21.28	36	89	98.00
08	76	22.71	37	90	98.00
09	77	18.71	38	91	98.00
10	78	21.43	25	92	98.00
12	79	21.00	25	93	98.00
12	80	19.57	26	94	98.00
13	81	98.00	26	95	98.00

Note: The mean number of days between observations for classes that were observed only twice is given as "98.00." (See text.)

Table 74

Third Year Observation Sample: Mean Number of Observations Children Were Present for, by School, Class and Sex

School	Class	Mean No. for Females	No. of Females	Mean No. for Males	No. of Males	Total Mean	Total Number
01	69	8.00	2	8.00	2	8.00	4
02	70	8.00	1	0.00	0	8.00	1
02	71	7.20	4	5.50	6	6.20	10
02	72	7.00	8	7.10	7	7.06	15
07	73	0.00	0	2.00	1	2.00	1
07	74	4.60	3	4.20	7	4.37	10
08	75	0.00	0	8.00	1	8.00	1
08	76	5.80	5	6.00	1	5.85	6
09	77	6.70	4	6.20	4	6.42	8
10	78	7.20	4	8.00	1	7.40	5
12	79	8.00	2	5.50	2	6.75	4
12	80	6.50	2	6.70	4	6.66	6
	Total	5.75	35	5.60	36	5.67	71

Table 75

Third Year Observation Sample: Number of Male and Female Subjects in Each Class Present at Each Observation

School	Class	Observation Number 1			2			3			4			5		
I.D.	I.D.	M	F	Tot	M	F	Tot	M	F	Tot	M	F	Tot	M	F	Tot
01	69	2	2	4	2	2	4	2	2	4	2	2	4	2	2	4
02	70	0	1	1	0	1	1	0	1	1	0	1	1	0	1	1
02	71	5	3	8	5	4	9	5	4	9	4	4	8	5	3	8
02	72	7	7	14	7	8	15	6	7	13	6	7	13	6	5	11
07	73	1	0	1	1	0	1	(moved to 07-74)								
07	74	3	2	5	3	2	5	3	2	5	2	2	4	1	1	2
08	75	1	0	1	1	0	1	1	0	1	1	0	1	1	0	1
08	76	1	5	6	0	5	5	0	6	6	1	3	4	1	2	3
09	77	4	3	7	3	3	6	3	3	6	3	3	6	3	1	4
10	78	1	4	5	1	4	5	1	3	4	1	4	5	1	3	4
12	79	1	2	3	2	2	4	2	2	4	1	2	3	1	2	3
12	80	3	2	5	4	2	6	4	2	6	3	2	5	3	2	5
	Mean	2.4	2.5	4.9	2.4	2.7	5.1	2.4	2.9	5.3	2.2	2.7	4.9	2.2	2.0	4.1

Note: M signifies Male; F, Female

Table 75 (cont.)

Third Year Observation Sample: Number of Male and Female Subjects in Each Class Present at Each Observation

School I.D.	Class I.D.	Observation Number 6			7			8			Mean		
		M	F	Tot	M	F	Tot	M	F	Tot	M	F	Total
01	69	2	2	4	2	2	4	2	2	4	2.0	2.0	4.0
02	70	0	1	1	0	1	1	0	1	1	0	1.0	1.0
02	71	4	4	8	3	4	7	3	3	6	4.2	3.6	7.8
02	72	6	8	14	6	7	13	6	7	13	6.2	7.0	13.2
07	73	(moved to 07-74)									1.0	0	1.0
07	74	1	1	2	3	2	5	3	2	5	2.3	1.7	5.0
08	75	1	0	1	1	0	1	1	0	1	1.0	0	1.0
08	76	1	4	5	1	6	7	1	5	5	.75	4.5	5.3
09	77	3	1	4	4	3	7	2	3	5	3.1	2.5	5.6
10	78	1	3	4	1	4	5	1	4	5	1.0	3.6	4.6
12	79	1	2	3	2	2	4	1	2	3	1.4	2.0	3.4
12	80	4	0	4	4	1	5	2	2	4	3.3	1.6	4.9
	Mean	2.2	2.4	4.6	2.4	2.9	5.3	2.0	2.8	4.8	2.3	2.6	4.9

142

Table 75 (cont.)

Third Year Observation Sample: Number of Male and Female Subjects in Each Class Present at Each Observation (New Schools)

School	Class	Observation 1			Observation 2			Mean		
I.D.	I.D.	M	F	Tot	M	F	Tot	M	F	Total $\bar{X}$
13	81	0	1	1	0	1	1	0	1	.50
30	82	1	0	1	1	0	1	1	0	.50
32	84	1	0	1	1	0	1	1	0	.50
33	85	1	0	1	1	0	1	1	0	.50
34	86	0	1	1	0	1	1	0	1	.50
16	87	0	1	1	0	1	1	0	1	.50
35	88	1	0	1	1	0	1	1	0	.50
36	89	1	0	1	1	0	1	1	0	.50
37	90	1	0	1	1	0	1	1	0	.50
38	91	1	0	1	1	0	1	1	0	.50
25	92	0	1	1	0	1	1	0	1	.50
25	93	0	1	1	0	1	1	0	1	.50
26	94	1	0	1	1	0	1	1	0	.50
26	95	0	1	1	0	1	1	0	1	.50
	Total	14	14	28	14	14	28			
$\bar{X}$	Mean	.57	.42	1.00	.57	.42	1.00			

Chapter VII

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